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OXFORD
AT THE CLARENDON PRESS
1956

OXFORD ECONOMIC PAPERS

(NEW SERIES)

OXFORD ECONOMIC PAPERS, of which eight numbers appeared at irregular intervals between 1938 and 1947, became a periodical in 1949 and is now published three times a year. The pre-paid subscription price is 25*s*., post free, and the price of a single copy 12*s*. net. Orders may be placed with any bookseller or sent direct to the Publisher.

PAPERS should be sent to the General Editor, c/o The Clarendon Press, Oxford. Contributors receive 50 free offprints. All correspondence other than that dealing with contributions should be addressed to the Publisher:

GEOFFREY CUMBERLEGE, OXFORD UNIVERSITY PRESS
AMEN HOUSE, LONDON, E.C. 4

OXFORD ECONOMIC PAPERS

NEW SERIES
VOLUME VIII
1956

OXFORD
AT THE CLARENDON PRESS
1956

Oxford University Press, Amen House, London E.C.4

GLASGOW NEW YORK TORONTO MELBOURNE WELLINGTON
BOMBAY CALCUTTA MADRAS KARACHI
CAPE TOWN IBADAN NAIROBI ACCRA SINGAPORE

PRINTED IN GREAT BRITAIN
AT THE UNIVERSITY PRESS, OXFORD
BY CHARLES BATEY ,PRINTER TO THE UNIVERSITY

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THE RAW COTTON COMMISSION, 1948–52[1]

By J. WISEMAN and B. S. YAMEY

On 1 January 1948 the Raw Cotton Commission became the sole importer and seller of raw cotton in Great Britain. The Act setting up the Commission[2] provided for the appointment of a Chairman, either one or two full-time members (the 'independent members'), and not more than ten part-time members. All but two of the part-time members were required to have special knowledge of the cotton textile industry, and the independent members could, but need not, be similarly qualified.[3] The Commission had a monopoly of the importation and sale of raw cotton until September 1952, when, on the recommendation of the Cotton Import Committee[4] set up to review the position, private importation was again permitted as an alternative to purchase from the Commission. After a further Committee[5] had reviewed the working of this arrangement, the Conservative Government introduced a Bill in November 1953 providing for the winding up of the Commission, and it is now in process of liquidation. The time is appropriate, therefore, to consider the extent to which the expectations both of those who advocated the creation of the Commission and of those who opposed it have been borne out by the Commission's activities and experience during its life as a monopolist trading in raw cotton.[6]

I. The Origins of the Commission

Private trading in raw cotton and in cotton futures was suspended

[1] We wish to thank members and staff of the Raw Cotton Commission for their co-operation in answering our questions over a long period of time. We also wish to acknowledge our debt to the officers and officials of the Federation of Master Cotton Spinners' Associations, Ltd., to those of its members who read and commented upon an earlier draft of this paper, and to other members of the cotton textile industry who gave us advice and information. Of course, the views expressed in the paper are our own.

[2] The Cotton (Centralized Buying) Act, 1947, 10 and 11 Geo. 6, ch. 26.

[3] The Board of Trade was responsible for appointments to the Commission, and (together with the Treasury) for general regulation of its financial activities. It also had powers to direct the Commission 'on matters appearing to the Board to affect the public interest', but there is no evidence that it did so.

[4] *Report of the Cotton Import Committee*, Cmd. 8510, Apr. 1952.

[5] *Report of the Cotton Import (Review) Committee*, Cmd. 8861, June 1953.

[6] We do not consider, save incidentally, the activities of the Commission after the withdrawal of its monopoly power. We also do not attempt to appraise the wisdom of the decision to restore private trading in cotton in Sept. 1952 rather than earlier or later. Further, we do not consider whether a body like the Commission might not be used for purposes other than those contemplated by its creators; in particular, we do not discuss whether a body like the Raw Cotton Commission could be used as an instrument for subsidizing the cotton textile industry.

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during the last war, and was replaced by a government agency, the Cotton Control. The problem facing the Control was, simply, to ensure adequate supplies of reasonable cottons to enable the cotton textile industry to fulfil its war-time functions. Price, though of some relevance, became a secondary consideration. The Control accordingly began to negotiate bulk contracts from 1942, and succeeded by this policy in building up stocks from the dangerously low 1941 level of 178,000 tons to a peak of 411,000 tons in 1945. Cotton textile production was concentrated on utility goods and on material for the armed forces, with emphasis on quantity rather than quality in production. Cotton was sold to spinners in bulk by description only; prior sampling and selection were precluded by the need for speedy removal of goods from dangerous port areas.[1] The system worked fairly smoothly in war-time. Market conditions were quite different from those of peace-time. Prices were decided by use of a formula such that spinners, operating to guaranteed margins, had no special incentive to make careful selection of the type of cotton to be used in manufacture.

This procurement system was similar to that adopted for other raw materials. After the war, however, when other raw material markets were reopened, or indications given that reopening waited solely upon suitable trading conditions, the cotton market was singled out for special treatment as a relatively small and unobtrusive element in the Labour Party's nationalization programme. Cotton purchasing and trading were nationalized by the Cotton (Centralized Buying) Act, 1947. The Act was passed at a time when nationalization was popular *per se*; it was nevertheless unusual in that raw cotton trading exhibited none of the features the presence of which was used to justify the nationalization of other branches of economic activity. Raw cotton trading was not significant as a potential source of concentration of economic power; there was in any case no evidence of monopoly in raw cotton buying or selling. It was not a key industry the operations of which might have important effects on many other industries, and no capital investments, of a kind likely to have important secondary effects on general levels of income and employment, were involved. There was no unrest among the trade unions directly

[1] Cotton is not a homogeneous commodity; growths from different regions vary in the length of the cotton fibre (staple) and in the intrinsic qualities of the cotton (grade): some fibres, for example, spin a 'softer' yarn than others and are thereby better suited to particular spinning and weaving purposes. Also, cotton can be more or less well packed, unstained, free from dirt, and so on (see n. 1, p. 4). In these circumstances, the accurate description of cottons, and (for those with very special requirements) such facilities as sampling of the cotton before delivery, are an integral part of the peace-time cotton market (see Section IV). Even in the quite different war-time conditions being described, the Cotton Control did arrange to have the cotton it purchased classed and passed in the country of origin.

concerned,[1] and the operations of the pre-war organized markets had met with only isolated criticism from spinners.[2]

The government's reasons for nationalization were not entirely unambiguous or unequivocal, but it was clear that the major argument related to the direct economic advantages (in buying, selling, and cover facilities) expected to follow from the creation of a statutory monopoly.[3] In both buying and selling, it was argued, it would be possible to make use of 'centralized knowledge'. In cotton *buying*, the experience of the Cotton Control and the examples of multiple stores and the co-operative movement were adduced as evidence that economies of bulk buying were possible.[4] Long-term bulk-buying agreements with Empire producers would not only benefit Britain by providing increased and assured supplies, but would also be of advantage to the producers themselves, by providing an assured market for their produce. Improvement in the actual cotton bought was expected: cotton stocks would be more varied, 'bad spinning' prevented,[5] and the buying programme would be decided 'with knowledge of the requirements of the whole industry'. Despite these claims, no more was expected from the buying economies than that they would enable purchase 'at least as economically as by private importation'. When *selling* cotton to spinners, the Commission would be able both to 'assure long-term stability for spinners in the price of their materials', and to operate a cover scheme affording 'a very high degree of protection against price changes', including cover of a kind 'which was not afforded . . . before the war' by the Liverpool Cotton Exchange.[6] While there was no direct condemnation of speculation *per se*, the frequent references in parliamentary and other political debate to gambling and to the effect of speculation on cotton prices revealed the dislike on the government side of *private* speculation.

The claims made for a centralized buying agency were received with considerable scepticism by the Opposition party in Parliament and by most spinners.[7] It was pointed out that the Cotton Control provided no

[1] The only unions to express strong views on the matter were concerned with textile *manufacturing*, and had little direct contact with the raw material markets. (See, for example, the *Report on Ways and Means of Improving the Economic Stability of the Cotton Textile Industry*, prepared for the President of the Board of Trade in 1943 by the United Textile Factory Workers Association.)

[2] See quotation in *House of Commons Debates*, 28 Mar. 1946, col. 630, for an example.

[3] The summary of views (and the comment on their ambiguity) which follows is elicited from *House of Commons Debates*, 28 Mar. 1946 and 2 Dec. 1946, and from the reports of a speech on the subject by Mr. Marquand (Secretary for Overseas Trade) to the United Textile Factory Workers Association in May 1946.

[4] See *House of Commons Debates*, 2 Dec. 1946, col. 42 (speech by Mr. Marquand).

[5] This practice is explained on pp. 20–21.

[6] See, in particular, *House of Commons Debates*, 2 Dec. 1946, cols. 42–52 (Mr. Marquand).

[7] The government made some attempt to claim support among the spinners, and cited a Report of the Federation of Master Cotton Spinners, circulated as long ago as 1928, to the

reliable evidence about peace-time trading, since it had never operated in a commercial environment. The government buyer, said the critics, would be 'seen a mile off', and attempts by a bulk buyer to exert pressure in world markets would both create political problems and stimulate monopolistic combination among producers. Far from having precise foreknowledge of the industry's requirements, the agency would have to rely on global statistics and would be unable to deal with small-scale or 'special' requirements.[1] Furthermore, it was argued that raw cotton prices at home could be stabilized only by requiring the government to bear the risks caused by fluctuations in world prices. Speculation would not be prevented by the Act, but would be transferred from informed private specialist dealers to the central agency, which would also be a permanent 'unhedged bull', as it must necessarily bear sole responsibility for ensuring the availability of cotton stocks.

Any appraisal of the Commission's activities must take account of the environmental factors set out in the next section. These make it difficult to arrive at completely firm conclusions. Nevertheless, the Commission's history does provide useful evidence by which to test the validity of these diverse views and expectations of its original creators and opponents.

II. The Market Environment

World markets were characterized throughout the duration of the Commission's monopoly by dollar shortage and by the intervention of governments in the marketing process. About 80 per cent. of world cotton production is of 'American-type' cottons. This is composed of U.S.A.-produced cotton (normally about half the cotton entering world trade is exported from the U.S.A.) and of broadly substitutable types from

effect that a benefit of grouping or amalgamation of mills was the 'bulk buying of cotton in whichever market offers the best possibilities'. In fact, the Federation joined with the Liverpool and Manchester Cotton Associations in a deputation of protest against the creation of the Commission to the Lord President of the Council, and also submitted a memorandum of protest to the Board of Trade. A questionnaire elicited that owners of around 90 per cent. of the industry's spindles preferred the pre-war system.

The statement of the Cotton Board Committee on Post-War Problems, 1944, on the subject of bulk buying by amalgamations of mills is of interest:

'. . . experience in Lancashire tends to establish that the individual unit, if in efficient hands, has never been at any disadvantage *vis-à-vis* the combines in these respects. In point of fact the larger concerns have either not resorted to these policies or have not done so on a large scale'.

[1] See *House of Commons Debates*, 2 Dec. 1946, col. 138 (Mr. Fletcher), for an illustration of this.

The Liverpool Cotton Association illustrated the difficulty of trading in bulk or simply by description in this way:

'. . . one can buy cotton in the United States standardised as Middling in grade, 1-inch in staple. This type of cotton . . . will vary as to colour, bloom, character and strength of staple. One mill may require a bright style of cotton of soft staple, while another may require a rough style with hard staple. Both . . . might be quite correctly shipped as Middling 1-inch. . . .' *Liverpool Cotton Association Pamphlet*, May 1946.

other sources. Egypt is the principal producer of another large group of longer-stapled cottons, known as 'Egyptian-type'. The consequence of the world dollar shortage was a shift in the pattern of demand and consumption away from dollar and towards non-dollar sources of cotton. The shift was brought about largely by means of currency controls imposed by cotton-consuming countries, and not by the 'rationing' of dollar cotton supplies by their relative prices. For much of the post-war period non-dollar cottons have been high in price relative to dollar cotton; up to 1951 (i.e. even after devaluation) dollar cotton was still regarded as 'the cheapest cotton in the world'.[1] This situation gave a cost-advantage to countries having both supplies of dollars and a cotton textile industry able to use American-type cottons.[2] It also led other cotton-growing countries, which were themselves short of dollars, to favour 'hard-currency' buyers either by creating dual price-levels or by prohibiting non-dollar sales. These conditions, together with the various quota schemes described in the next paragraph, so restricted British use of U.S. cotton that only about 21 per cent. of British imports of cotton came from the U.S.A. in the period 1946–8, as against 42 per cent. in 1935–8.[3] There is a general belief in the industry that the pre-war proportion would have been approached after the war in the absence of the currency shortages and quota schemes, with favourable effects on the industry's efficiency and competitive position.

Government intervention in the world cotton market during the life of the Commission was most important (in terms of results) in the case of America. The U.S. Government offered loans to growers on the security of their cotton, conditional upon acreage quota agreements between government and growers. In this way a floor was provided for the price of American cotton, in the absence of which 'it seems certain that the general world level would be substantially lower'.[4] The drawbacks of this scheme from the point of view of the international textile industry were very clearly demonstrated in 1951, when acreage quota restrictions together with low yields per acre reduced the volume of American cotton available so drastically that quantitative export restrictions were imposed and cotton allocated to importing countries by the U.S. Government by

[1] See report of speech by Mr. H. O. R. Hindley (Chairman of the Commission) to the Liverpool Economic and Statistical Society, 28 Oct. 1949 (*Manchester Guardian*, Oct. 1949).

[2] e.g. Japan and Belgium were in this position.

[3] There was a great increase in the proportion of retained imports coming from the Commonwealth. Empire sources provided 6·3 per cent. of the total in 1930–4, and 30·1 per cent. in 1952. The proportion fell to 25·2 per cent. in the following year, when private importation was permitted as an alternative to purchase through the Commission.

[4] See reports of speech by Mr. H. O. R. Hindley, loc. cit. While Mr. Hindley is perhaps too certain, the view is not unreasonable. To the extent that his argument is valid, there was the piquant situation of the world price of cotton being bolstered by quota restrictions imposed by a country whose own cotton was relatively undervalued in world markets.

means of yet another quota scheme. This had important effects upon the policy of the Raw Cotton Commission and on the British textile industry in general; more dollars were available for the purchase of cotton in 1951 than the Commission was able to spend. In Egypt, the government also intervened in the cotton market by the operation of a guaranteed minimum price scheme for growers, and further affected the market at different times by the imposition of export taxes and by direct trading in cotton.[1]

Disturbed market conditions existed when the Commission was created. Indeed, the government pointed out that currency shortages would prevent completely free trading in cotton whether the Commission existed or not. But general machinery intended to be of a temporary character already existed for dealing with problems of currency shortage, and it was not suggested by the government that the setting up of a permanent Commission to trade in this one commodity could be justified by the contemporary scarcity of dollars. It was foreseen that the Commission itself might be prevented by the currency situation from providing a complete service to spinners; critics went further and suggested that the dollar shortage would be aggravated by the Commission's inability to mobilize and utilize individual buying skills as efficiently as private traders could.[2]

In the event, reference to difficulties in world markets came to be the Commission's most frequent and general answer to adverse criticism of its activities,[3] and it came to be believed widely that dollar shortages and intervention in the market by foreign governments were the major reasons for the Commission's creation and existence, though this view is not in accord with the facts.[4] Nevertheless, a balanced judgement of the efficiency of the Commission's operations requires that these market conditions be kept in mind, so that problems created by them can be

[1] Soon after the setting up of the Raw Cotton Commission, Egypt reimposed the export tax on cotton, which had been in abeyance for two years, and increased it from the former level of ¼*d.* per lb. to 2¼*d.* per lb. Direct intervention was resorted to in 1951–2, when Egyptian prices were falling rapidly. The government entered the market as a heavy buyer in July and Sept. 1951, and again in 1952. These purchases failed to stem the decline, and the Alexandria futures market threatened to break down, some large dealers being unable to meet differences. The government then took up July futures at $125, and removed the export tax for several months.

[2] See, for example, *Memorandum* of the Federation of Master Cotton Spinners' Associations, Ltd., to the Board of Trade, 7 Nov. 1945, para. 15.

[3] '. . . the Commission has been widely and unjustly blamed for shortcomings wholly outside its control. The sensitive fluctuations of demand in relation to price cannot easily be adjusted to the availability of foreign currencies. . . . In other cotton-growing countries, small crops have created a shortage for domestic use and have led to severe export restrictions. Similarly, the world shortage of dollars has caused increasing competition for non-dollar growths, which may be expected to become even more intense in the future.' *Annual Report of the Raw Cotton Commission*, July 1948, para. 20.

[4] Cf. e.g. *House of Commons Debates*, 18 Jan. 1948 and 7 July 1949.

distinguished from problems inherent in the nature of public monopoly in cotton trading.

III. The Commission's Purchasing Methods

After the end of the war the Cotton Control began to replace its wartime practice of purchasing in bulk quantities by the purchase of cotton in relatively small individual lots from the agents in Liverpool of foreign cotton shippers. By the end of 1947 cotton from America, India, and the Belgian Congo, amounting in that year to about 33 per cent. of total purchases, was being bought by this means. In Egypt and Brazil the Control (and afterwards the Commission) maintained buying offices which classed cotton in the country of origin and made purchases in that country in direct competition with other buyers. These offices accounted for 47 per cent. of total purchases in 1947. An essentially similar arrangement existed in Peru, except that a private British firm acted as buying agent. Bulk purchasing was being used only in respect of Sudan cotton (11 per cent. of total purchases) and of cotton from other Empire sources (7 per cent. of the total).

During its first year the Commission abandoned its buying office in Sao Paulo and the services of its Lima agent, and the method of purchase through shippers' agents in the U.K. was extended to Brazilian and Peruvian cottons. These changes left a buying office only in Egypt. This office purchased around 40 per cent. of the total Egyptian crop annually; the Commission believed it to cause less disturbance of the market than would the use of shippers' agents. In any case, political considerations, and in particular the censorship of cables and letters, were thought to make immediate changes impracticable.[1] The first modifications were made in 1951, when it was arranged that Egyptian cotton should continue to be purchased in Alexandria, but against shippers' types approved at the beginning of the cotton season in Liverpool. The quality of shipments was to be passed in Liverpool, and arbitration was to be transferred to that city from Alexandria.[2] In the same season the Commission took the further step of inviting offers of cotton in Liverpool as well as in Alexandria, and by the 1952–3 season all requirements were being met by Liverpool offers.[3]

By 1952, then, the Commission had largely abandoned the practice of centralized bulk buying which had been so prominent in the minds of its

[1] *Annual Reports*, July 1948, paras. 18 and 19, 1948–9, para. 11, and 1949–50, para. 11. There is some indication in the 1950 Report that political conditions had become the main reason for there being no change in methods.

[2] *Annual Report*, 1950–1, para. 10.

[3] *Annual Report*, 1951–2, para. 3.

creators;[1] purchase of cotton through shippers' agents at home accounted for all but 18 per cent. of the total amount bought,[2] the remainder being obtained mostly through bulk-purchase agreements from the Colonial Empire. These agreements with colonial territories were a continuation of those entered into earlier by the Cotton Control. In view of the claims advanced for bulk purchase when the Commission was created, it is worth while to study the subsequent development of the agreements more closely, even though only about one-fifth of total purchases was affected by them. We examine in turn the arrangements made for purchasing cotton from Nigeria, Uganda, and the Sudan.[3] These areas were the important sources of cotton purchased in bulk; they were also areas in which the sale of exported cotton was in the hands of official or semi-official marketing authorities.

From 1940, Nigeria's exportable cotton crop was bought in bulk by the (British) Cotton Control at prices agreed with the colonial marketing authority in advance of each season. The Commission took over the outstanding obligations of the Cotton Control, and at first continued the existing practice of bulk purchase by fixed-price agreements. In 1949 the Nigeria Cotton Marketing Board was established as a statutory marketing monopoly to replace the earlier authority, and in that year the Commission and the Board entered into an agreement covering the Nigerian exportable surplus of cotton for a period of three years, beginning with the 1949–50 crop. Prices for the year's exportable[4] crop were fixed each October, and it was agreed that the price fixed in any year was not to diverge by more than 15 per cent. from the previous year's price. The Commission also undertook to pay a development premium for each bale purchased over 40,000.[5] The Board were pleased with the fact that this contract provided a guaranteed minimum price.[6] In the event, however,

[1] In its *Annual Report*, 1950–1 the Commission writes of buying Brazilian on a 'hand to mouth' basis.

[2] The changes in buying methods seem to have brought satisfactory results: the 1948–9 Report says of Brazilian purchases that 'as far as price is concerned it is clear that the change has not been disadvantageous' (para. 29). Some improvement also occurred during the period as a consequence of the growing experience and acumen of the Commission itself. This showed itself, for example, in the introduction of a policy of selection of American shippers on the basis of their past record in an effort to improve the quality of shipments, which proved to be 'an unqualified success'. The Commission also introduced new Egyptian cotton standards when dissatisfied with the cotton being tendered against Alexandria standards.

[3] On what follows, see the sections of the Commission's *Annual Reports* dealing with buying in the regions concerned.

[4] A small proportion of the total crop was sold for local manufacturing use.

[5] A Nigerian bale is approximately 410 lb. The premium was on a rising scale: £1 per bale from 40,000 to 60,000 bales, then £1½ per bale up to 80,000 bales, over 80,000 bales to be fixed by negotiation if necessary.

[6] 'It will be noted that the main advantage to the Board from this agreement was that the prices for cotton lint for the 1950–1 and 1951–2 seasons could not fall below the levels of the percentage limit.' *Annual Report* of the Nigeria Cotton Marketing Board, 1949–50.

more favourable prices could have been obtained on world markets than those negotiated with the Commission during the whole of the period covered by the arrangement. This was recognized when the agreement was extended in October 1950 to cover the 1952–3 and 1953–4 seasons, with a 'rolling clause' providing for further extension at each October negotiation. In consequence of these negotiations, the permitted annual price variation was increased to about 25 per cent., with an agreed lower price limit for any season covered by the agreement.[1] The development premium was also altered, becoming a fixed sum of £4 per bale for each bale purchased over 60,000.[2] The price-fixing arrangements were made even more flexible in October 1951; for the 1951–2 season the Commission undertook to buy 40,000 bales at an agreed price, the rest of the export crop[3] to be bought at 'seller's call'. With this arrangement the seller had the option to fix the price of lots of 10,000 bales or more from time to time on the basis of price quotations in the U.S. cotton market, subject only to observance of the agreed maximum and minimum levels.[4] This scheme enabled the Board to take 'advantage of rising cotton prices during the latter part of the season'.[5] The 'seller's call' arrangement was continued in later seasons; it was considered by the marketing authority to 'ensure that the best possible selling prices are obtained for Nigerian cotton'.[6]

In short, the Raw Cotton Commission's buying practices in Nigeria evolved from fairly specific advance price-fixing to arrangements in which the price paid was closely linked to that prevailing in world markets, and in which the revenue obtained by the colonial marketing authority was determined largely by its skill in deciding when to sell. There can be little doubt that the Nigerian authority gained from the change. This is suggested not simply by the Board's own satisfaction with the evolution, but also by the statistical evidence of the average value of British imports of cotton of similar staple from Nigeria, Peru, and the U.S.A. between 1936 and 1954.[7] In comparison with pre-war price relationships, the average prices paid for Nigerian cotton during the period 1948–51 were low;[8] the price relationship moved in Nigeria's favour from 1952 onwards,

[1] The price of NA1 grade cotton was not to fall below 19*d.* per lb. c.i.f. U.K. for any season covered by the agreement.

[2] £4 per bale is approximately 2·3*d.* per lb.

[3] In the event this excess amounted to 60,000 bales.

[4] The price was to be fixed on the basis of the U.S. March futures quotations up to 20 Feb. 1952, and on the basis of U.S. May quotations from 20 Feb. to 20 Apr. 1952.

[5] *Annual Report* of the Board, 1951–2: 'In the face of the unpredictable trends of the market, this arrangement provided a reasonable safeguard. At the worst, the position was satisfactory and secure while at the best it could be very advantageous.'

[6] *Annual Report* of the Board, 1952–3.

[7] See note 7 on the following page.

[8] It may be added that in this period, and particularly in 1951, the world price of U.S. cotton was at times restrained by various controls. The statistics therefore understate the relative lowness of Nigerian cotton prices.

when advance price-fixing was progressively abandoned. While statistics of this kind can give only a rough indication of the position, the changes are large enough for the inference to carry conviction.

Superficially, it might appear that the bulk-buying scheme was successful in another direction: the Nigerian cotton crop rose from 30–35,000 bales before the war to 140,000 bales in 1953–4. It is clear, however, that this increase could not have been due either to the level of prices negotiated between the Nigeria Cotton Marketing Board and the Commission or to the development premium payments scheme later introduced. In fact, the prices paid to the producers by the Board were far below those realized by it on the sale of cotton to the Raw Cotton Commission, and were also below the prices producers could have obtained had they been free to sell in world markets. During the years 1949–53 only about two-thirds of the net proceeds of the Marketing Board's sales to the Commission was passed on to the growers, most of the rest[1] of the Board's revenues being retained in a reserve fund.[2] There is indeed evidence that the Nigerian cotton marketing authority was concerned to co-ordinate its policies with those of other authorities dealing with other agricultural products in order to preserve what was called the 'balance' of agricultural production, and that this sometimes involved the quite deliberate inhibition of any possible incentive effects of high world prices on cotton production.[3] Growers were

[7] Volume and value of imports of raw cotton, under $1\frac{1}{4}$ in. staple and over $\frac{7}{8}$ in. staple, imported into Great Britain from Nigeria, Peru, and U.S.A.

	Country					
	Nigeria		*Peru*		*U.S.A.*	
Year	*Volume* (000 *centals*)*	*Average (c.i.f.) value* (£ *per cental*)	*Volume* (000 *centals*)	*Average (c.i.f.) value* (£ *per cental*)	*Volume* (000 *centals*)	*Average (c.i.f.) value* (£ *per cental*)
1936 .	110·7	2·8	713·4	3·3	6,010·6	2·7
1937 .	148·4	3·0	835·6	3·3	7,466·5	2·6
1938 .	94·8	2·1	789·8	2·8	4,329·7	2·1
1948 .	109·4	4·3	330·2	13·1	1,834·5	9·6
1949 .	220·8	5·8	441·2	14·2	4,121·2	9·9
1950 .	274·0	11·0	621·3	17·0	2,810·3	13·7
1951 .	307·2	14·9	662·0	29·5	2,106·4	15·5
1952 .	431·6	16·5	249·9	20·2	2,162·4	15·2
1953 .	392·9	14·7	350·6	14·6	1,919·2	13·2
1954 .	568·9	13·7	478·8	15·9	2,574·4	13·7

Source: Board of Trade and H.M. Customs and Excise. * 1 cental = 100 lb.

[1] Some small part of the surplus was spent on investment projects (including research into cotton growing) autonomously decided upon by the Board.

[2] Moreover, it may be noted that the price guarantees in the agreements between Board and Commission were not at all necessary for any policy of *producer* price stabilization which may have been envisaged by the Nigeria Board; the Board's power as sole buyer for export enabled it to divorce the prices paid to producers from the fluctuating prices of the world market, whether such guarantees existed or not.

[3] 'In deciding the provisional minimum prices to be paid for the 1952–3 crop, an important consideration taken into account was the need to fix prices at a level which would not adversely affect food production and result in shortages which would in turn lead to

clearly not unaware of the advantages of circumventing the Board's buying monopoly; some cotton appears to have passed directly (and illegally) into neighbouring territories. This general situation was not altered by the introduction of development premia into the bulk contracts between Board and Commission, since no similar incentive scheme appeared in the Board's own arrangements for payments to growers.[1]

The evolution of buying agreements in Uganda was essentially the same as in Nigeria. The marketing authority was the Uganda Lint Marketing Board, which began to function at the end of 1949. The 1949–50 crop was sold in bulk on terms agreed earlier by the British Government and the colonial authorities. In the following season, four-fifths of the exportable crop was sold in bulk to the Raw Cotton Commission and the Government of India, the remainder being disposed of in the free market. The bulk agreement provided for sale at fixed prices. These conditions of sale were altered for the 1951–2 crop: the new pricing formula stipulated an agreed price, but permitted a variation from this determined by the average movement of cotton futures prices on the New York market. Also, the new agreement provided for the sale of 200,000 bales of cotton to the Commission and India jointly. This was based upon an estimated crop of 300,000 bales; if there was an excess over this latter amount (as there eventually was), 50 per cent. of it was to be sold under the bulk agreement, and the rest on the free market as before.

Like the Nigeria Board, the Uganda Lint Marketing Board passed on to growers only a portion of its net receipts (about two-thirds in the three years 1949–50 to 1951–2), and the Commission's agreements gave no direct incentive to growers. Moreover, at first the Uganda Board, in continuance of previous practice, bought cotton from growers without offering any additional return for superior grades or condition. In consequence, the crop deteriorated,[2] and the effects were serious enough to

increases in the cost of corn and other staple foodstuffs.' Also, the Nigeria Groundnut Marketing Board had not changed its producer prices, and '. . . some measure of relative uniformity should exist between the two price structures if the economic balance of the Northern Region was to be maintained'. *Annual Report* of the Board, 1952–3.

[1] It is not suggested, of course, that the Commission could be held responsible for the cotton buying policy of the colonial marketing authorities.

[2] '. . . many [ginneries] just do not care what happens to the cotton because they are paid by weight. Everywhere I went, I heard nothing but wholesale condemnation of the system of bulk buying, except from ginners. . . . What does it matter as long as they are paid by weight?'

'There is no incentive to the grower to grow good cotton—he just gets paid the same price whether it is pure B.P. 52 or mixed.'

'Up in the North they are fetching cotton from across the Nile and mixing it with the Buganda cotton against all regulations. . . .'

(Mr. J. Littlewood, Chairman, at the Annual Meeting of the Empire Cotton Growing Corporation, July 1949. The statements refer to the system of payments existing before the Uganda Lint Marketing Board was established; the Board adopted this system in its first year.)

cause a change in policy. The agreement between the Board and the Commission for 1950–1 provided for sale 'on the basis of physical standards . . . instead of the former basis of description',[1] and the Board itself introduced grading schemes, with premium and discount payments by quality.

The contracts with the Sudan were the Commission's largest single agreements. Until June 1950 most Sudan cotton was purchased by bulk contract from the Sudan Plantations Syndicate and the Kassala Cotton Company, which were private concerns with concession rights from the Sudan Government. Other cotton (such as White Nile and Nuba Mountain) was bought directly from the Sudan Government. When the concessions expired in 1950, the companies were replaced by the Gezira Board, a Sudanese body with substantial independence in contractual matters. None of the Sudan authorities accumulated reserves by following policies similar to those described for Nigeria and Uganda.

Each year the Cotton Control, and later the Commission, obtained and took up an option on 60–70 per cent. of the total crop. Until 1948, a contract price was fixed in advance, but in that year the Egyptian price of comparable cottons rose after the contract price had been settled, and the Commission had to agree to pay a higher price. Thereafter, the contract was used simply to ensure supplies; prices were not negotiated in advance, but were settled by agreement by reference to the concurrent prices ruling in the free Alexandria spot cotton market. The Sudan Government also made a point of holding back some part of its crop for sale by auction each year 'with the object of conserving their other overseas markets'.[2]

The failure of the bulk contract system (and particularly of fixed-price arrangements) to fulfil the expectations of its advocates, and the resultant movement towards less 'planned' alternatives, cannot be regarded as particularly surprising; the notion that such contracts must benefit both

[1] *Annual Report* of the Board, 1949–50.

[2] *Annual Report* of the Commission, 1949–50, para. 14.

The marketing of the British West Indies crop during the period is of some interest. Like those discussed in the text, this crop is grown mainly by small producers; it is, however, much smaller in volume and is mostly long-staple high quality cotton. The Commission purchased the whole of the B.W.I. export surplus, but was never able to negotiate firm prices in advance. A price was in fact negotiated with the British West Indies Cotton Association in the United Kingdom and sanctioned by the Colonial Office, and from 1949 this was done at the time of ploughing in order to stimulate cotton growing. This price could only be recommended to growers, however, and was not binding upon them, although in the event the whole of the crop was usually sold to the Commission, whatever the price ruling in world markets. The reasons for this are not altogether clear. Attempts were made to create more formal contract arrangements. In 1948 the Commission suggested to the colonial Governors that they should encourage the creation of a Cotton Marketing Board, and when this failed, a limited company to negotiate contracts was proposed, but no progress seems to have been made (see successive *Annual Reports* of the Commission.)

buyer and seller in circumstances such as those described is unconvincing. Buyers are interested in a low price for cotton, sellers in a high one; their mutual interest could be served only if the bulk contract altered the trading environment for the better in other respects while leaving unaffected this prime conflict of interest. This might (but need not) be the case if (for example) fixed-price bulk contracts could be used (as there is no evidence that they can) to secure long-run price stability without any long-run loss of revenue to either party. There seems to have been little belief in the existence or value of such mutual benefits in other countries; no bulk contracts, fixed price or otherwise, were negotiated by the Commission outside the colonial territories. Indeed, the Commission negotiated no such contracts at all except in regions where some kind of bulk-purchasing arrangement was already in being when the Commission was created. Where long-term agreements with fixed prices were made, their subsequent history was uniformly one of modification to permit greater flexibility in price-fixing, until the contract price was quite closely linked with free market prices. The bulk contracts then became largely pre-emptive agreements with little value to the sellers, who could still have disposed of their crop at the market price if the agreement had not been made. This is exemplified by experience in the sale of Uganda cotton. No bulk agreement was made in 1952–3 following upon the British Government's decision to allow private importation of raw cotton as an alternative to purchase through the Commission. There was some anxiety in Uganda, encouraged by the sudden need to re-create marketing facilities. But the fears were groundless: the crop was disposed of without difficulty 'at prices . . . comparable to those obtaining for comparable growths in world markets'.[1]

It might be argued, of course, that the fixed-price agreements existed for too short a period for their benefits to have been felt, since, as we have seen, the original inflexible arrangements were soon modified. Thus, it could be contended that the prices paid by the Commission might have been as high as those obtainable in the free market if averaged over a long enough period of years, and that the quantity and quality of the crops might have been raised as a result of the consequent stability. Such an argument would be unconvincing on two grounds. First, there is no evidence that the Commission was pursuing a policy with this aim; the indications (e.g. the market-sharing agreement with India)[2] do not suggest

[1] 'There was some little local apprehension that Uganda exporters might not be able to find overseas markets for the whole crop at reasonable prices following such a long period of trading with only a very small proportion of the crop. The absence of a reliable market on which to hedge accentuated fears in this direction. In the event these fears proved groundless. . . .' *Annual Report* of the Uganda Lint Marketing Board, 1952–3.

[2] Possibly inadvertently, Mr. Harold Wilson, in the Standing Committee on the Cotton Bill, made quite clear the ability of the Commission to keep prices below world levels by

a policy designed to bolster the price of colonial cotton when world prices were falling. Such a policy would certainly have aggravated the Commission's already intractable problems of selling price policy.[1] Second, the success of a long-term scheme of this kind would have required the continuous co-operation of the colonial selling authorities for the whole of the requisite period, entailing a willingness to accept less than world prices, possibly for years at a stretch. The successive modifications that were in fact made to the original fixed-price agreements indicate that an attempt to obtain such co-operation could not but have produced considerable strain both in the relations between the Commission and the Boards and between the Boards and the better informed of the colonial growers.[2]

IV. Service to Spinners

Cotton spinners require of their raw material supply that there should be a range of suitable raw cottons from which to choose, while at the same time types particularly suited to special purposes are available. They also require a variety of contractual arrangements sufficient to enable continuous adaptation of purchasing policy to changes in the position of the firm and to ensure that contractual undertakings are satisfactorily fulfilled. Cottons grown in different geographical locations differ in length of fibre (staple) and in quality (grade); they also possess other individual characteristics making them more or less suitable for the purposes of particular spinners. The great geographical extension of cotton growing during the last 150 years has both increased the possibilities of substitution of one growth for another and produced cottons more peculiarly adapted to the special requirements of individual spinners. The possibilities of substitution depend upon the use to which the yarn is to be put. Thus, spinners of yarn for cotton sheeting have a good deal of latitude; it might be to their advantage to switch from one growth to another in consequence of a change in relative prices at the cost of suitable adjustment of their processing machinery. On the other hand, satisfactory production of yarn for the manufacture of fine velvets, super poplins, and laces depends upon adequate supplies of a quite narrow range of suitable cottons. To ensure that the cotton he purchased would be suitable for his requirements, the

its actions: '. . . if we are to have not bulk buying but private buying of the raw cotton, with every mill competing against every other mill . . . the result will be not only to put up the price but to endanger supplies in this country.' Parliamentary Debates, Cotton Bill, Standing Committee A (First Sitting), col. 30.

[1] See Section V, pp. 21–27.

[2] In fact, the payment of fixed prices below world market prices produced charges that the transactions were in fact compulsory sales, the colony having 'no option but to acquiesce in wishes forcibly expressed from Downing Street' (see Protest to the Colonial Secretary by the Liverpool Chamber of Commerce, Nov. 1949).

cotton spinner before the war could, if he chose, make use of the market's sampling facilities, which enabled prior inspection of agreed proportions of the cotton delivered against sample or specification. He could also utilize the services of merchants with special knowledge of his needs, since merchants were numerous and tended to specialize and to experiment with new types. To safeguard his supplies, the spinner could also enter into contracts to buy cotton for deferred delivery, either at an agreed price or 'on call'. The 'on call' contract enabled the buyer to 'fix' the price to be paid for his cotton at any time during the stipulated delivery period, by reference to the price ruling in the futures market at the time of fixing. It served the same purpose as an actual purchase of cotton and the off-setting sale of a futures contract, to hedge against the risk that the price of the cotton might change before the yarn made from it was sold. The 'on call' contract was a convenient device, enabling the spinner to make a yarn price for a customer with safety at any moment, simply by reference to the ruling futures prices.

The Commission's creators had expected that it would improve upon the pre-war service, since it would 'adjust the forward buying programme with knowledge of the requirements of the whole industry'. As the Commission discovered, 'size works no such magic in foreknowledge'. The information had to be discovered, and large-scale buying could magnify the consequences of erroneous forecasting. Initially, the Commission based its estimates of future requirements on the weekly returns provided by spinners for cover purposes,[1] which gave details of the mill stock and consumption of each spinner by growth and type.[2] But such returns, even if accurate, were unsatisfactory in that they gave historical information only, so that a purchasing policy based upon trends in the figures could take no account of current changes in the expectations and requirements of spinners. There was found to be a need to reintroduce the sampling, delivery and other facilities of the pre-war market, not only in the

[1] Cf. Section VI, pp. 27–33.

[2] The procedure was broadly as follows:

From its information about weekly consumption rates by growth and quality, mill stocks, R.C.C. stocks in this country, abroad and afloat, the Commission assessed the minimum stock holding (including mill stocks) required in this country (13 to 17 weeks) and the buying programme was framed to provide a monthly build-up of stock over future months to ensure that this minimum stock holding was always maintained. The weekly consumption by growth and quality was carefully watched and if there was any appreciable change in an upward or downward direction, the quantities defined in the buying programme for shipment in later months were adjusted accordingly.

This system applied in the main to the larger growths such as American, Indian, Pakistan, Egyptian, and Brazilian and mainly to qualities of which purchases could normally be made throughout the season. In the case of speciality cotton such as high-grade Karnak, which normally had to be bought in quantity at the beginning of the season or not at all, arrangements were made, *after consultation*, to enter the market for quantities of cotton in excess of the 13 to 17 weeks minimum stock holding.

interest of efficient production by spinners, but also to provide information and guidance for the Commission's own buying activities.[1]

Sampling facilities were provided early in the Commission's life. The antecedent Cotton Control had introduced a choice of three alternative contracts for users of Egyptian cotton. Cotton bought on description only against the Control's standard types was offered at a discount on the published selling price for the cotton concerned. By paying the full published price a buyer could take samples of 10 per cent. of the cotton he wished to purchase, and by paying a premium in addition he could purchase the right to sample all bales before delivery and to exchange all bales falling below standard, or, alternatively, demand a fresh tender of cotton. Extension of these facilities to other growths by the Commission was delayed only by the need to create centralized sampling and storage facilities (to replace the decentralized arrangements of the pre-war market), and by the unwillingness of the spinners to accept a 'cancellation clause' enabling the Commission to avoid contracts it was unable to fulfil because of circumstances outside its control. It was felt that as the contract was for the actual delivery of cotton it should bind the Commission to deliver the exact cotton specified. Finally, a condition was accepted permitting cancellation after three trial tenders, and contracts similar to the Egyptian ones came into use on 1 October 1948. Apart from the escape clause, these facilities were comparable to those afforded to spinners by the pre-war market.

Forward buying through 'deferred delivery' or 'on call' contracts took a good deal longer to arrange. The Commission proposed the use of such contracts in 1948, and expected facilities to be made available within the first quarter of 1949, as part of the proposed new cover arrangements.[2] In fact, the negotiations on the cover scheme were protracted, and in May 1949 a 'partial' deferred delivery scheme was introduced as an interim measure. This contract enabled spinners to make purchases for

[1] In the Commission's own words:

'The Commission has always recognised the importance of introducing deferred delivery and forward contracts. Only the largest spinners could afford to lock up substantial sums so as to ensure continuity of quality in their supplies of raw material, and the majority of unit mills were obliged to declare themselves "short" in their weekly price cover returns, without specifying their exact requirements. The Commission was thus deprived of advance information on spinners' requirements which would have been invaluable in framing its purchasing programme, because the movement of prices might lead a spinner to buy a different growth from that specified in his cover return. . . .' *Annual Report*, 1948–9, para. 49.

[2] The Commission's reasons for not providing such facilities earlier are interesting, particularly for the light they throw upon the effects of the 'parity of treatment' principle (pp. 17–19, below): '. . . it would clearly be disastrous to lull spinners into a sense of false security by entering into such contracts without first being reasonably certain that they could be fulfilled. The Commission had not been able to accumulate *a visible supply in every growth* which would be sufficient to justify the introduction of these facilities' (authors' italics). *Annual Report*, 1948, para. 46.

forward delivery at the price ruling at the date of contract.[1] As a result of uncertainties about supplies of American cotton, the contract was little used in the early stages except for Egyptian cotton, so that it did not become a useful source of information for the Commission's cotton buyers, and many spinners continued to find difficulty in planning forward[2] without incurring the costs of carrying large stocks—when these were obtainable. However, the scheme was gradually extended to other growths. In November 1949 the Commission broadened the contract to permit purchase for deferred or forward delivery either at fixed prices or 'on call', provided that adequate supplies were available of the growth and quality of cotton required. On paper these services approached those of the pre-war market. The new scheme was very welcome to spinners and of great potential value to the Commission as a guide to buying policy. Unfortunately, the scheme was launched in unpropitious circumstances; the requisite 'adequate supplies' were unobtainable in the ensuing crop period for an important range of growths. In particular, the Commission was handicapped by a short Brazilian crop and by the continuing ban on Indian raw cotton exports. These troubles were followed in 1950–1 by the quite general supply difficulties caused by the disastrously small American crop and the small quota of that crop allocated to Great Britain.

The Commission also offered facilities for the selection ('earmarking') of the actual cotton bought for forward delivery at the time of first purchase. This facility was most important in relation to purchases, for deferred delivery, of cotton from the Commission's own stocks. But the value of the service was much reduced as a result of the Commission's policy of 'parity of treatment'; 'earmarking' facilities could be made available to individual spinners only if the Commission's stocks of the particular cotton required were large enough to permit the offer of like facilities to the industry as a whole.[3] Such a principle of equal treatment was probably unavoidable for a public authority[4] enjoined to serve an undefined public interest; it was apparently considered to be in the best

[1] A further scheme permitting spinners of Egyptian cotton to 'liquidate forward yarn sales at a price corresponding to the Alexandria discount' was withdrawn because spinners feared that it would encourage their customers to cancel yarn orders placed at 'old crop' prices. *Annual Report*, 1948–9, para. 52. (The problems of new crop discounts are examined in the discussion of cover schemes, section VI.)

[2] The yarn quota system, introduced during the war, was still in operation at this time. This effectively restricted the stocks spinners could carry and the period for which they could plan forward, and so reduced the importance of the Commission's policies in this respect.

[3] Otherwise, deferred delivery purchase had to be by reference to sample, in accordance with one or other of the three buying contracts already described.

[4] A statement to the House of Commons in May 1948 gave this principle governmental approval, at least as regards the Cotton Control.

interests of the industry[1] to restrict 'earmarking' in such a way as to prevent the large combines from 'creaming the stock' of scarce types to the disadvantage of the 'less wealthy' unit mills.[2] But the policy could not but deprive the Commission of buying information, and place British spinners at a disadvantage in relation to such foreign competitors as could 'buy' these facilities if they thought it worth while.

Despite the arrangements described, then, the Commission's service to spinners appears to have been deficient in at least three respects. First, spinners' cotton requirements (by way of staple, suitability and continuity of quality, and ability to make purchases when their own stock position and assessment of world market conditions made it desirable) were never met as precisely as they had been by the free market; there were continuing complaints on this score, particularly, but by no means exclusively, from spinners in the fine trade with a highly specialized demand.[3] Second, deferred delivery and 'on call' facilities were never as

[1] This concern to take care of the 'interests of the industry' appears frequently in the Commission's statements. But there is clearly no such interest except, at most, on a few very special issues. What is in the interests of one firm will often be contrary to the interests of another. For example, some firms liked the 'parity of treatment' principle because they came out of it better than they would have come out of competition for supplies; others felt that the principle deprived them of services they would have willingly paid for.

[2] This argument is in interesting contrast with those advanced by the creators of the Commission, which could itself be described as a large buying combine.

[3] Firms stated regularly that difficulties of this kind were raising their costs, either by stimulating attempts to ensure continuity of supply by the carrying of larger stocks, or by encouraging the use of higher-priced cottons if their supply seemed better assured, or simply by enforced acceptance of the inconveniences and losses consequent upon the non-availability of desirable types. Irregularities in supply hindered redeployment by destroying the confidence of labour in new work systems, and made spinners unwilling to undertake to give continuity of quality. Two quotations may emphasize the nature and importance of these problems:

'Our only worry, and it has been a big worry, is to obtain the right quality of cotton from the Raw Cotton Commission. Never since the Government took over the buying of raw cotton have we been able to purchase adequate qualities of the right type for spinning velvet yarns. The Government's excuse is shortage of dollars . . . it is regrettable that we are not able to obtain the right type of American cotton when so much of the finished cloth is sold to America and Canada. . . . The Government and the Raw Cotton Commission have been approached on this subject over and over again.' Annual Report of Messrs. Balstone, Cooke-Rayonese, Ltd., Apr. 1952.

The frustration created by the inability to act upon judgements about world markets is well brought out by the following extract from the Annual Report of Messrs. J. and P. Coats, May 1948:

'Last autumn, when it would have been possible to purchase high-grade Karnak of suitable quality for our requirements at about 29^{d} per lb., we made repeated requests to the control authorities to purchase for us approximately two years' requirements. We do not know why they did not do so. . . . Over the period referred to replacement deliveries of this type of cotton to the mills were less than one-third of what we were consuming.

'I can offer no explanation as to why we were kept in such short supply . . . had we been free agents we would have made sure of an adequate supply of cotton at a time when market prices were much more favourable than they are now. We have now . . . received sufficient cotton . . . but at prices up to 60^{d}.'

Questions about this stimulated the Government's statement of the principle of equality of treatment (see p. 17, n. 4).

There are many other illustrations: e.g. Reports of Combined Egyptian Mills, Ltd.,

useful as had been expected, either to spinners or to the Commission, as they could never be made available automatically, or to the extent that they would probably have been provided by the free market, throughout the Commission's monopoly. Thirdly, the principle of 'parity of treatment' severely restricted the provision of such facilities as 'earmarking'.

Difficult world trading conditions complicated the Commission's task, and unquestionably bear some of the responsibility for the shortcomings of its service. But it is fairly clear that the Commission's position as a statutory monopolist and sole cotton importer was also not without importance in this respect. Thus the principle of 'parity of treatment', probably incumbent upon a statutory monopolist, was relaxed when that monopoly was ended, and cover arrangements[1] were also modified to increase the flexibility of producers' hedging arrangements. It is also not without significance that the Commission experienced great difficulties of internal organization and administration. These warrant more detailed examination, as they can reasonably be held to provide supporting evidence for the view that not all the Commission's deficiencies were attributable to world conditions, since many of the difficulties spring directly from the existence of a centralized buying and selling agency.

The Commission took over from the Cotton Control an organization similar to that generally adopted by cotton merchanting houses, with growth managers responsible for both the buying and the selling arrangements for particular growths. But the Commission's growth managers had to maintain contact with growers and buyers on a far greater scale than in any merchanting house, and there was an inevitable loss of detailed knowledge and efficiency.[2] Dissatisfied with the system, the

Nov. 1950; Calico Printers Assn., Ltd., Nov. 1949; Lancashire Cotton Corporation, Jan. 1949; J. and P. Coats, Ltd., June 1949; and Belgrave Mills Co. (1926) Ltd., Nov. 1951.

Apart from referring to difficult trading conditions in world markets, the Commission's most general answer to complaints of this kind, and particularly to complaints about quality, was that 100 per cent. sampling facilities were available for those who chose to use them, and that since their use was in fact negligible the quality problem could not be serious. While the spinners on their part may have overstated their case, this evidence is not unambiguous proof of the skill of the Commission's cotton classers; it can equally well be interpreted as evidence of the lack of value of a 100 per cent. sampling contract that had to be purchased at a cost, but did not offer a firm quality guarantee since the Commission had no binding obligation to supply a suitable cotton (see p. 16).

[1] See Section VI.

[2] See *Annual Report*, 1948, para. 15. Merchanting houses were '. . . mostly comparatively small units, in which the principals maintained a close and intimate contact both with their suppliers and with their customers'.

The nature of the Commission's problem appears to be illustrated by the policy for the buying of Egyptian cotton in 1948 which was much criticized. After letting it be known that they would not be buying, the Commission had to enter the market late and buy at much higher prices in order to maintain stocks. This appears to have been the consequence of a failure of the internal administrative arrangements.

A difficulty of another type arose in respect of cotton for velvet manufacture. The Commission invited representatives of the velvet trade to approve types of suitable cotton

Commission took the advice of a firm of industrial consultants[1] and reorganized its work into three main departments, buying, sales, and finance and administration, each under the control of a senior executive, with the independent members of the Commission left free to decide major policy questions. This scheme was fully implemented in November 1949, when the general buying manager was appointed. Buyers and sellers were expected to become specialized in their functions, with benefit to efficiency, but in fact the difficulties of co-ordination between departments seem to have been no less than the difficulties of large-scale co-ordination by individual growth managers;[2] by the end of 1951 the Commission had reverted to the type of organization earlier found to be unsatisfactory, with four managers responsible for both the buying and selling of four distinct groups of cottons. The administrative problems do not appear to have been solved by organizational change; they would appear to be a manifestation of the general diseconomies of very large size in this kind of business. It is certainly clear that the difficulties relate rather to centralized buying and selling *per se* than to the world trading conditions that the Commission faced.

In contrast with these deficiencies, it has been suggested that the Commission's service did succeed in improving upon the pre-war service from the point of view of the spinning *operative*. It is claimed to have eliminated the 'bad spinning' that had occurred from time to time before its creation. However, this claim is dubious. 'Bad spinning' is the spinning of particular yarns from cottons that are inferior from the point of view of the operative, in that they reduce his earnings, increase his work-load, or both. It would appear that the possibility of 'bad spinning' must indicate a defect in the system of wage-payment rather than in the method of cotton supply; no one has suggested that either the Commission or the free market refused to supply the types of cotton asked for by spinners if that cotton could be made available. Further, while the defect might be

(S.M. 1⅛ in., 1 1/16 in. Memphis). After the Commission had bought about 7,000 bales of cotton to match these types, the velvet trade turned to other cottons that it found better, and the Commission had to carry the stock for some years. No private trader would have placed himself in so vulnerable a position.

The size of the Commission's own stocks was alone enough to create problems of administrative control. For example, there is no evidence that even a physical check of the stock taken over from the Cotton Control was accomplished inside the Commission's first year of existence.

[1] It may be noted that this advice was taken in preference to that offered by the trade, which would have involved the employment of merchant firms to act on behalf of the Commission. *Annual Report*, 1948–9, para. 10.

[2] For the departmental scheme to function, it was essential for the sales department to have enough authority to ensure that its knowledge was acted upon by buyers. It has been suggested, not implausibly, that the fact that the head of the buying department was a member of the Commission while the head of the sales department was not may have been a contributory (though not a fundamental) cause of the failure of the experiment.

difficult to remedy, no employer would have an incentive to take advantage of it unless he was not worried about losing his operatives by doing so. This suggests that full employment and a textile labour shortage, rather than the methods of cotton supply, were responsible for the disappearance of 'bad spinning'. This view is strengthened by the fact that complaints about the practice did begin to reappear during the one short but severe textile recession that occurred during the Commission's monopoly.[1]

V. Price Policy

The government, in setting up the Commission, had expected it to pursue a price policy such that spinners would be 'assured of a long-term stability in the price of their materials'. The Act itself required that cotton be sold at prices 'best calculated to further the public interest in all respects', and also that the Commission should balance revenues and expenditures 'on an average of good years and bad'. The Commission, it seems, did not expect that these requirements would necessarily be compatible.[2] It placed emphasis upon its obligation to further the public interest, and interpreted that obligation in the broadest sense.[3] This was particularly important in the formulation of price policy. In the words of the Commission's first Chairman:[4]

> In fixing selling prices, the three full-time members[5] of the Commission had to take into account not only replacement cost and relative spinning values but also the cost at which the cotton was bought, which, in the end, limited the extent of its price manipulation. They had, moreover, to give supreme regard to the public interest, which covered a wide range of subjects, including the availability of foreign currency, the necessity to stimulate exports, the maintenance of employment in the industry, the avoidance of labour troubles . . . and the necessity to preserve good relations with suppliers.

The Commission took over a functioning policy of long-term price stabilization from the Cotton Control, and continued for some time to change prices relatively infrequently; the price of individual cottons was not normally being changed more than once weekly at the end of 1949. But the trading situation had changed a good deal since the introduction

[1] The impression in the trade is that spinners 'went higher in grade' (i.e. used better quality cottons) in the period of good trade after the war. Revival of complaints about bad spinning coincided with a reversal of this movement when the recession encouraged a search for usable but lower grade and cheaper cottons.

In any case, the trade unions agreed that only a minority of firms had ever been affected. (On the bad spinning question as a whole, see correspondence in the *Manchester Guardian*, 5–16 June 1953.)

[2] 'These two provisions may, of course, prove to be mutually inconsistent in certain circumstances.' *Annual Report*, 1948, para. 48.

[3] The Act itself contains no definition or explanation of the public interest.

[4] Speech by the Chairman, Mr. H. O. R. Hindley (see n. 1, p. 5).

[5] The fixing of selling prices was reserved to the full-time members by directive of the Board of Trade under para. 6 (3) of the Act.

of price stabilization by the Cotton Control. The Control had held large stocks, accumulated for strategic reasons, and had sold to customers with a negligible (though developing) interest in the export trade. Further, the trend of world prices during its life had been generally upward. In those circumstances, the Control was able 'to balance profits on one growth against losses on another, thus maintaining a balanced relation between selling prices and spinning values'.[1] Prices could remain unchanged for long periods; only seven changes were made between 31 March 1941 and 31 December 1947, and two of these were decreases made specifically to offset wage increases in the cotton textile industry. By the time the Commission inherited the Control's policy, trading circumstances had become very different. Exports and foreign competition were once more of importance, and losses on one growth could be offset by profits on others only by raising the home price of the profit-making growth above that paid by foreign spinners buying in world markets, so that 'exporters in that section of the trade would be at a crippling disadvantage with their foreign competitors'.[2] Accordingly, considerable dissatisfaction was caused by the conspicuous lack of correspondence between the Commission's price and the world market price of Egyptian cotton in the early months of the Commission's activities. The divergences in prices for American-type cottons were in general less marked, but could be significant; in March 1948 spinners found themselves faced with increases in the prices of American types at a time when their world market prices were falling.[3]

The Commission was early aware of the dangers and disadvantages of *long-term* price stabilization; the policy was abandoned, in principle, as early as the end of March 1948, when the Commission decided that 'the only practicable policy was to fix prices approximately in line with the replacement price ruling from time to time in the world's markets'.[4] The full implementation of a policy of more flexible prices waited upon the acquisition by the Commission of the requisite skill and experience; it was also inhibited by the administrative difficulties created by the Commission's cover scheme,[5] and by the existence of controls in other parts of the cotton textile industry. In particular, price changes were made

[1] *Annual Report*, 1948, para. 50.

[2] Ibid., para. 51.

[3] The extent of the price divergences in both Egyptian and American is well brought out by the price charts given in the Commission's Annual Reports.

[4] *Annual Report*, 1948, para. 52. It is noteworthy that the Commission did not consider this to be a complete abandonment of the stabilization principle, but rather as a replacement of long-period by short-period stabilization. This seems to have meant in practice that the Commission's prices for spot cotton were always in force as a matter of policy for at least a single business day, in contrast with the minute-to-minute fluctuations in the free market. But stabilization of this minimal kind is almost inevitable for a monopolistic seller; no one else can quote a price and more frequent changes by the single seller would be administratively difficult.

[5] See Section VI, p. 29.

more difficult for the Commission by the government's price-control arrangements, and especially by those concerned with utility cloths. These controlled prices were based upon the Cotton Control's war-time policy of administered price stability for raw cotton, and it seems to have taken a considerable time to get them adjusted to the new situation. As these obstacles were overcome, price changes became more frequent, and the Commission moved gradually towards an imitation of one of the significant characteristics of the pre-war market, in that the Commission's selling prices came to be changed more and more rapidly in response to changes in world market conditions. When stability was first abandoned, prices were changed weekly at most and on Mondays only. By the end of 1949 changes were being made on any day, and in September 1951 five new price lists were issued in one week. Thenceforward, a policy of changing prices daily if necessary (as compared with minute-to-minute changes in the pre-war market) obtained. As a corollary, individual price changes became smaller.

Although long-term price stabilization was abandoned, and despite the growing efficiency of the Commission in implementing a broad policy of selling prices based on replacement costs, the relationship between the Commission's prices and those prevailing in world markets never became exact or predictable.

There were four kinds of reasons for this.[1] Two arose directly from the fact that pricing at replacement cost was never the Commission's sole or over-riding aim. First, the Commission always felt itself free to depart from replacement-cost pricing if some other objective (such as its desire to use 'skilful or fortunate' purchases below world levels[2] for the purpose of stabilizing prices) was thought more important in the light of its assumed responsibilities in regard to the public interest. Second, the Commission was unwilling to ignore the relative spinning values of different cottons when deciding prices. If world replacement prices at any time failed to reflect relative spinning values in the British industry, a strict replacement-cost policy was likely both to cause unwelcome shifts in demand towards the favoured growths and make for difficult relations with the spinning industry. Consequently, the replacement-cost principle was always subject to modification to take account of spinning values.

The third reason for divergence from replacement-cost pricing concerns the fact that the Commission, while wishing to price at replacement cost, was driven to depart from that principle in order to protect itself, in its position as a central stock-holder, from losses consequent upon the

[1] An additional but less fundamental reason was the fact that some cotton-growing countries did not have continuously operating spot markets.

[2] *Annual Report*, 1948, para. 52.

unpredictability of changes in demand and price. This question is important enough to merit more detailed consideration. It had been predicted when the Commission was created that it would be an 'unhedged bull', carrying large stocks and susceptible to large gains or losses as world cotton prices changed. Those who were unimpressed by this proposition argued that, by carrying such gains and losses internally, a body as large as the Commission should be able to balance its long-term position, particularly if it abandoned price-stabilization policies. Thus, if world price movements were followed closely, and if price fluctuations were regular, then (if the price *trend* was not rising or falling),[1] the Commission would not gain or lose in the long run if the stock from which it met spinners' requirements remained constant. Unfortunately, the postulates of this 'internal compensation' argument have little relation to the conditions in which the Commission had to trade. The argument only holds if the price trend is horizontal and if fluctuations are regular—conditions not to be expected in the world cotton market. In any other circumstances, even if a constant stock is held, large gains or losses must be a possible, even likely, contingency, and it would at best have required a very long period for gains and losses to balance one another, if such a balance were achieved at all.

Furthermore, the Commission did not in fact keep a constant stock of cotton. It tried to maintain a reserve of approximately four months' consumption of all the main growths, but modified this to take advantage of any opportunities to purchase particular cottons whose supply might be affected by currency difficulties or disturbed trading conditions.[2] This policy naturally resulted from time to time in the Commission having an unusually 'long' speculative interest in some cottons. For example, very large stocks of Egyptian cotton were built up in this way, and the Commission suffered heavy losses when the price of the cotton in this 'strategic reserve' fell. In any case, the Commission's *ability* (as distinct from its *desire*) to control its stock position was inevitably affected by unpredictable variations in demand from spinners. It may also be noted that whenever the Commission's prices were below world prices, as a consequence of any departure from a strict replacement-cost policy, the Commission's stocks were liable to be depleted by spinners demanding cotton freely in the expectation that the Commission's prices would rise. If quick orders could be obtained for the yarn, the spinners could avoid the need to make difference payments under the cover scheme[3] when the price in fact rose, and so could gain a competitive advantage.

Lastly, the Commission's pricing policy had to take account of the

[1] With a constant stock and regular fluctuations, a rising or falling trend would result in a long-term gain or loss.

[2] See n. 2, p. 15.

[3] See Section VI.

peculiar position of U.S. cotton in world markets. Purchases of U.S. cotton were an important item of British dollar expenditure, and the volume of imports of U.S. cottons (which varied around half the total volume of imports of American type) was fixed by the government by reference to the country's foreign exchange position, and not by the Raw Cotton Commission's estimate of the demand for U.S. cotton at the sterling equivalent of the ruling U.S. market prices. The Commission therefore had less U.S. cotton than spinners would have taken at such prices. It also kept stocks of other American-type cottons of similar spinning values bought, up to 1952, at significantly higher sterling prices.[1] It met this situation by selling not at approximate replacement prices for such cottons but at an 'averaged' replacement price, arrived at by combining the prices of all comparable growths.[2] Spinners thus had to buy their cotton at 'administered' prices determined largely by the relative proportions of dollar cotton and more expensive outside growths that resulted from the government's import programme. In consequence, dollar cottons were more expensive in Britain than in countries with no controls on dollar expenditure, and non-dollar cottons (e.g. Brazilian) were generally less expensive. Exporters were at a disadvantage in relation to those of other countries such as Belgium and Japan which could use dollar cottons more freely.

There can be little doubt about the wisdom—indeed inevitability—of the Commission's abandonment of long-term price stabilization. Nevertheless, the policy actually pursued, which took account both of buying prices and replacement costs and also permitted adjustments on account of the other factors just explained, was never an unqualified success either from the point of view of the spinners who purchased the cotton or from that of the Commission itself. The difficulties and uncertainties created by the Commission's price policies were the source of continuing complaints from individual spinners—complaints that did not fail to point out that only a monopolist would be able either to treat buying prices as relevant to the fixing of selling prices or to indulge in averaging. Not all the complaints were reasonable; some spinners seem to have expected a policy of price stabilization when prices were rising and one of quick price adjustment when prices were falling. But apart from complaints from users of American cotton who felt themselves at a disadvantage in world markets,

[1] See Section II, pp. 4–7.

[2] The Commission also practised another form of averaging which it thought reasonable for 'a monopoly owner of a stock'. This consisted of the spreading of the charges incurred in holding the whole of its cotton stock over the cotton actually sold. Criticisms based on comparisons of Commission and world prices which ignored or took imperfect account of this averaging were thus thought by the Commission to be misleading and unjust (see *Annual Report*, 1952–3, para. 101). But it is not without significance that the possibility of such criticisms depended entirely upon the Commission's position as a monopolist.

and general comment on the handling of the price increases that followed the short American crop of 1950, criticism of the Commission's pricing policy did not become widespread during its first 3½ years, largely because a world seller's market made the effects of that policy less noticeable. However, the criticism became frequent and insistent in the summer of 1951, when American prices were affected by the expectation of a large cotton crop to follow upon the current small one. This situation coincided with the beginning of a decline in world demand for cotton textiles. The combination of circumstances directed the attention of British spinners to the excess of the Commission's American price quotations over U.S. new crop prices, and to the Commission's price policy in general, and produced a widespread and not altogether justified outburst of criticism.[1]

At the same time, the Commission was not able to protect itself from the consequences of its vulnerability as a central stockholder. The annual accounts showed large profits from its operations in some years and large losses in others, the differences being accounted for by changes in the market value of the Commission's stocks, and, to a smaller extent, by the gains and losses from the operation of its cover scheme. An important part of these gains and losses must be regarded primarily as the consequence of the existence of the Commission, since it is unlikely that private traders, with their greater freedom of action, would have held cotton stocks during the period of the Commission's existence of anything like the size of those held by the Commission, and there is no reason to suppose that this would have been economically disadvantageous. The Commission was under no *legal* obligation to maintain stocks, but its position as a statutory monopolist and its interpretation of its own responsibilities in regard to the furthering of the public interest made the carrying of such stocks unavoidable.[2] It may be suggested, further, that the exceptional size of the stocks on which major losses were incurred,[3] and to some extent the price policy pursued by the Commission in certain periods, may also have been influenced by the strength and views of the spinning interest on the Commission itself.[4]

In spite of the Commission's experiences, a belief has persisted that there was no reason why a policy of long-term price stabilization should not have

[1] The events of 1951 are revealing not only for the light they throw on the Commission's price policy but also in regard to its cover schemes. Accordingly, they will be explained more fully after the cover schemes have been outlined in the next Section.

[2] 'A body charged, like the Commission, with a responsibility to enable the industry to keep in production cannot be wholly guided by purely commercial motives when considering the desirability of purchasing cotton . . . ordinary commercial prudence would preclude the building up of a long position of any magnitude.' *Annual Report*, 1952–3, para. 101.

[3] They are believed to have reached over two million bales.

[4] In contrast with other nationalized enterprises, the interests of consumers were well protected. The constitution of the Commission was such that the independent members were greatly outnumbered by the trade representation.

been successfully pursued. It will therefore be useful, in completing the examination of price policy, to consider what other types of stabilization (different from the policy inherited from the Cotton Control) might have been pursued, and what would have been their probable consequences. There were two main possibilities: the Commission might have tried to stabilize world prices by using its influence as a large buyer in world markets, or it might have tried to 'insulate' the British spinner from world fluctuations by an internal price-stabilization policy for each type of cotton. The first alternative would have put the Commission in the position of a speculator going against price movements in world markets, and making heavy losses if its expectations were incorrect.[1] The second alternative, of 'internal' stabilization, would have meant buying at world market prices and selling to spinners at an 'averaged cost price' for each designation of cotton. The 'averaged price' would have been fixed to cover total buying costs over a period. But here also the Commission would have had to distinguish between price movements of a short-run nature and changes in long-run equilibrium conditions when computing the 'averaged price'; failure to guess correctly would have resulted in a speculative gain (or loss) at the expense (or in favour) of the spinners. Also, this second type of policy would have caused difficulties similar to those already explained, by causing divergences between the Commission's prices and world prices. Spinners and others would have needed to set aside the additional gains made in times of rising prices to offset the British industry's buying disadvantage when world prices were falling, and this financial problem would have been exacerbated to the extent that falling prices coincided with difficult world trading conditions.

VI. Cover

In the last section we discussed the position of the Commission as a speculator, vulnerable to risks of gain or loss because of changes in the price and volume of its raw cotton stocks. Risks of this type are of course inseparable from economic activity requiring the purchase of materials for sale (in whatever form) at some subsequent point in time, so that the price of the material can change between the time of purchase and the later sale. Such risks are taken, for example, by any spinner who purchases cotton to spin 'for stock'. Futures markets, by providing facilities for individuals ('speculators') to specialize in the taking of price risks, enable those who wish to have only a 'trading' interest in the goods concerned

[1] Its position would have been similar to that of an international commodity price-stabilization authority with control of only a portion of total trade and relying on one country alone to meet any losses.

(the 'hedgers') to offset such risks. Markets of this kind have developed the world over; they illustrate the possibilities and advantages of division of labour.

The Liverpool Cotton Exchange provided the pre-war facilities for futures trading in raw cotton. Futures contracts were available and in general use in respect of American, long-staple Egyptian, and short-staple Egyptian cotton; there were also less popular contracts for Empire and Miscellaneous and for Indian cottons. A spinner working 'for stock' could, in the absence of an 'on call' arrangement of the kind earlier described, 'hedge' the price-risk consequent upon his cotton purchase by the simultaneous sale of a futures contract for an appropriate quantity of cotton. When the yarn was sold, the transaction was completed by buying back the futures contract. Others with an interest in cotton (growers, merchants, converters, manufacturers, &c.) could use the facilities in a similar way, buying futures to offset 'selling' risks, and selling them to offset 'buying' risks in respect of the raw cotton content of their new materials or products. With minor limitations, all concerned were in a position to choose that combination of price-risk bearing and price-risk avoidance that they thought best.

To the extent that a loss (gain) from a change in price of actual cotton was exactly offset by a gain (loss) from a change in the price of the futures contract, the hedger would be in the same position as if the purchase price of his 'actuals' cotton had continued unchanged. There was no certainty that this would be the case; the protection from risk provided by any particular futures transaction was incomplete. The hedger continued to carry 'residual' risks of two kinds. Firstly, the relationship between the actuals market for raw cotton and the futures market was such as to ensure that prices in them moved roughly together, but there was no reason for the movements to correspond exactly in any given time-period. Secondly, the futures contract fixed the price of a 'basis grade' cotton, and the payments due or owing on the contract at maturity were determined by the behaviour of the price of that cotton in the actuals market. But the hedger's actuals interest[1] would often be in some other cotton, so that he continued to bear the risk that the changes in the prices of the two cottons over the contract period might be dissimilar. Residual risks of this second type do not seem to have been of major importance for raw cotton users.[2] In fact, such empirical evidence as is available suggests that despite both types of residual risk, the pre-war futures market provided

[1] e.g. the raw cotton he held for use in his manufacturing operations.

[2] Their significance was minimized by the possibilities of substitution between cottons in manufacture, which tended to prevent undue divergences between the prices of different cottons in the spot market, and by the similar possibilities created by the delivery terms of the futures contracts in general use.

a high degree of cover for a *consistent* hedger[1] whether his spot interest was in the basis grade or in a cotton or commodity not even deliverable against the futures contract concerned.

During the war the futures market was closed, and cover facilities were provided for most of the period by the Cotton Control. The Control had to take cotton as and when it could be obtained, and wanted it decentralized in the hands of spinners as quickly as possible. Spinners thus came to be in possession of larger stocks of cotton than they would have taken voluntarily, and of qualities that they would not necessarily have selected themselves. The Control's cover arrangements relieved spinners of the price-risks created by this situation. All varieties of cotton were altered in price simultaneously and by the same amount. Spinners made weekly returns of their stock and sales commitments to the Control and paid or received price differences, according to their net 'short' or 'long' position, on the occasion of price changes. The Control maintained a staff of inspectors, but although unintentional errors were discovered from time to time, no complete check on returns was made, as price changes were infrequent and the Control was able to restrict the volume of transactions in the period immediately before they occurred. Conditions after the war caused this scheme to be modified. In May 1946 a 'cover symbol' was allotted to each of the main growths, and prices began to be quoted and cover provided separately for each symbol. Spinners were able to remain covered under the old scheme, and some few opted to do so; some also decided to remain without cover altogether rather than undertake to cover the whole of their transactions with the Control, as was required of participants. This system, which was the one taken over by the Commission, had a number of drawbacks. No cover at all was provided for people other than spinners with an interest in cotton, and the spinners' scheme was itself defective. The rendering of weekly returns and the administrative complexity of the cover scheme made it impossible to change prices more than once weekly, so that the cover arrangements provided an important reason for the slow implementation of the new price policy described in the last section.[2] At the same time, the large size of the price changes which sometimes were made caused great difficulties for spinners caught 'long' or 'short' of the cotton concerned.[3] With price changes made once weekly on Mondays, it therefore became worth while for spinners to make a guess during the preceding week as to likely price changes and to endeavour to adjust their trading activities (and with them

[1] i.e. one undertaking a series of hedging transactions rather than a single one, so that residual losses and gains could cancel out over time.

[2] See Section V.

[3] The importance of this can be assessed from the fact that the great increases in Egyptian prices during 1948 caused such distress to some fine spinners called upon to produce large sums to meet differences that the Commission had to provide special financial accommodation.

their net 'long' or 'short' position) so as to anticipate and take advantage of the change.[1] It was also possible, with this system, for 'long' spinners to use the cover scheme to obtain cover against a 'new crop' discount;[2] such a discount could not have been hedged in a futures market by those choosing to carry cotton over the relevant period.

The Commission introduced a new cover scheme at the end of 1949 to remove these faults.[3] This gave spinners complete cover against price changes in the particular growth in which their actuals interest lay, the spinner being required in return to maintain a balanced position (within prescribed limits, and 'on call' purchases apart) between raw cotton purchases and yarn sales. The scheme provided for the deferred delivery and 'on call' arrangements already discussed,[4] and also provided cover for spinners buying cotton to spin 'for stock' by allowing them to 'fix' the price of the cotton at a later date. This scheme persisted almost unchanged throughout the rest of the period of the Commission's monopoly.[5]

The Commission also began to create separate cover schemes to take care of other interests. The first of these was the Cover Contract Scheme for converters. The converters wanted a scheme that would afford them protection when running dangerously 'long' positions.[6] They made it clear that they had no wish to cover the whole of such holdings, but only particular types and for particular markets. The scheme enabled a converter who bought cloth to sell nominal 'futures' to the Commission, provided he did not rebuy in less than three months or more than twelve months. While the scheme provided some flexibility, restrictions were imposed by the Commission 'to limit the possibilities of speculation at its expense'.[7] The scheme was useful during the post-war boom period, but less so after 1951 when converters could buy cloth for immediate delivery and have it processed at once. Another scheme, similar in principle, but designed to take care of different kinds of interest and separately

[1] Spinners could also adjust the timing of their returns to show the best possible position, though it is not suggested that this happened on any very general scale.

[2] A discount of this kind actually occurred in 1948, and was hedged against by spinners carrying stocks.

[3] The necessary six months' notice to terminate the earlier scheme had been given as long before as May 1948, but the discussion of the new arrangements with the trade was protracted. In the interim, the Commission tried to 'check abuses' by seeking agreement to amendments in the method of submitting returns, but without success.

[4] See Section IV.

[5] The most important amendment was made in 1952 to take care of the fact that spinners, affected by the recession and spinning for stock in preference to closing down, began to extend the period of call of their 'on call' cotton further and further. A new 'long position' cover arrangement was then introduced, which enabled such cotton to be finally invoiced, while affording protection for yarn stocks by making provision for the settlement of differences.

[6] It should be pointed out that risks of other kinds were sometimes more important to converters—e.g. the risk that foreign buyers might cancel orders placed at very high prices. No market or body could be expected to provide cover against this kind of risk on reasonable terms.

[7] *Report of the Cotton Import Committee*, para. 15.

administered, was developed for weavers and doublers, and three distinct schemes were introduced to cope with the cover problems of vertically integrated organizations. In addition, from the end of 1949 the Commission operated an overnight export offer cover scheme, to provide overnight cover for spinners with interests in the export market. All the schemes offered complete protection against changes in raw cotton prices in respect of the cotton content of the goods traded, thus eliminating some of the residual price risks carried by the hedger in the pre-war market.

The Commission's price and cover policies were the subject of great controversy in 1951. In the summer of that year a large American crop was expected, and the New York futures market showed a heavy forward discount. After July, when 'old crop' prices ceased to be quoted in New York, there was a very marked difference between the New York prices quoted for the new crop cotton and the Commission's spot prices for American cottons. This provoked criticism of the Commission's practice of 'averaging' and also of the operation of cover schemes which did not afford protection against the forward discount. It was argued that the Commission should begin to quote and sell its existing stocks at new crop prices before the new crop cotton became available on world markets. If it did not do so, it was suggested, it would be using its monopoly powers to force those spinners who had to buy at the higher prices to carry losses that should rightly be borne by the Commission. The Commission refused to adopt such a policy. It supported its replacement-cost principle on the grounds that new crop prices were irrelevant until the cotton began to reach the market, and that there was no 'old crop' American cotton to be bought in world markets at New York prices quoted after July. In this the Commission was probably right; the free market did not afford protection to spinners carrying cotton 'into the discount', and the natural result of a short crop followed by the expectation of a long one is progressively to reduce spot stocks as the 'new crop' months approach. Thus, the Commission's best policy would appear to have been one designed to reduce its stocks to their minimum operational level, by successive price reductions, by the time new crop cotton became available. The losses of those constrained to carry cotton would then have been borne as in a free market. However, the Commission advanced other arguments in defence of its policy; it argued that it was acting in the long-run interests of the trade as a whole, since, if it yielded, expectation of a large crop in future years would cause trade to stagnate even longer, as buyers would wait for the Commission's reductions. Spinners suggested that such an attitude was only possible for a monopolist, that the policy was influenced by a Treasury desire to avoid loss, that foreign buyers of textiles were being discouraged by the Commission's price lists (which, they said, made evident the price

handicap under which the British producer laboured and indicated that exporters elsewhere were likely to be cheaper) and that the decline in trade (which was in fact the beginning of a world-wide textile recession) was attributable directly to the Commission's activities.

The Commission felt and stated that many of the criticisms of the price and cover policy pursued in 1951 were unjust and ill-informed,[1] and this view was not without justification. But the criticism was encouraged by the 'moral' flavour of the Commission's attitude to a commercial matter, by its attempts to safeguard 'the' interests of an industry with many divergent interests and (as was pointed out earlier) by the fact that a statutory monopoly of this kind provides a natural focus for complaint and attracts blame for circumstances often outside its control.

In some respects the Commission's cover facilities were superior to those of the pre-war market. Spinners were given complete protection against the 'residual' price risks that they had had to carry in the free market, and participants in other schemes were able to avoid some residual risks that had formerly been unavoidable. Many traders found these cover facilities very valuable; some of the textile combines, which had been continuously critical of the Commission, expressed anxiety when its abolition was projected lest they be left without comparable cover facilities. There were, of course, offsetting disadvantages. The Commission's cover arrangements required a separate set of rules and administrative arrangements for each type of risk covered, as against the unified organization of the futures market. The schemes also required, broadly, that the trader should cover all his transactions or none, whereas the Liverpool futures market could be used to obtain that degree of protection that individual traders thought most appropriate at any time. This meant a great loss of flexibility in the hedging arrangements. There is evidence that some firms considered this loss to be not without importance, and the Commission showed its own appreciation of the value of less rigid arrangements when the monopoly was terminated and private importation permitted, by introducing modified arrangements that allowed producers to have an uncovered 'long' interest if they so desired.

Price-risks were not abolished by the Commission's cover schemes. Rather, speculative activity was denied to traders by the requirement that they keep a balanced position, and the Commission, through its cover scheme, took the price risks instead. Thus, in addition to being a speculator on the grand scale as the central stockholder, the Commission had to speculate to a significant though relatively less important extent in providing cover facilities. Nevertheless, it has been claimed that, quite apart from the excellence of the cover they provided, the Commission's

[1] *Annual Report*, 1950–1, ch. v.

schemes served a useful purpose in preventing 'harmful' speculation by private individuals. But the nature and existence of such 'harmful' speculation is difficult to establish. The pre-war private speculator performed an economic function; condemnation of his activity as 'gambling' ignores the fact that the risks he specialized in taking were not created by him but had to be borne whether or not such specialization existed. The only proposition of interest is that the activity of private speculators may have had 'harmful' (i.e. destabilizing) effects on spot prices through 'speculation about speculation' as made familiar by Keynes. While evidence about this is not easy to collect, since speculative behaviour *per se* is difficult to isolate, it appears probable that such destabilizing speculation is of less importance in commodity markets, in which spot market trading provides a continuous check on expectations, than in the security markets that Keynes himself had in mind.

Lastly, it is apparent that, with these cover arrangements, any price-change made by the Commission affected not only the world competitive position of British spinners and the value of the Commission's own sales, but also the size of its gains and losses under its cover schemes. The wisdom of allowing these three separate and possibly conflicting interests to be reconciled by a unified authority such as the Commission is open to question.

VII. General Conclusions

There is one respect only in which the Commission appears to have provided facilities superior to those of the free market. This is in the provision of cover facilities. Since the reopening of the Liverpool Cotton Exchange, circumstances in world markets beyond the control of the Lancashire industry have created difficulties for those requiring cover facilities from the free futures market, and there must be many spinners who look back wistfully to this aspect of the Commission's activities. From the community's point of view, however, a clear issue of principle arises: the excellence of the Commission's cover arrangements depended in the last analysis upon their reliance upon the public purse.

In many other respects the Raw Cotton Commission fell short of the ideals of its creators, justified the forebodings of its early opponents, and provided spinners with services that they considered inferior to those they would have expected of the free market. The strength and sincerity of the spinners' views in the matter were demonstrated when the efficiency of the statutory monopoly was put to the test. After the publication in April 1952 of the Report of the Cotton Import Committee set up to examine the operations of the Commission, all growths of cotton were divided into four broad groups, and spinners were permitted to opt

whether to buy their cotton requirements entirely from the Commission or entirely privately in respect of each group. Cover continued to be provided by the Commission. Twenty-nine per cent. of the industry (in terms of previous consumption) 'contracted-out' of purchase from the Commission in the first year that this was permitted, and the figure rose to around 60 per cent. in the second year.[1] The statistics underestimate the importance of contracting-out, particularly in the first year, since they include single mills being used as 'pilot' buyers for combines, and since some cottons continued to be bought in bulk on the Commission's long-term contracts, and so were not easily obtainable by private purchase. It is clear, however, that spinners were prepared to take the opportunity to buy privately despite the short-run difficulties such buying entailed, and that (on the evidence of the increase in contracting out in the second year) they were not dissatisfied with the results.[2] The government appears to have taken such a view: it did not adopt the recommendation of the Cotton Import (Review) Committee in June 1953 that the contracting out system be continued. Instead, legislation was introduced to wind up the Commission.

The Commission's deficiencies cannot be attributed to its personnel, whose technical competence and good intentions were generally accepted; nor can they be attributed entirely to the world trading conditions that obtained during the Commission's life, difficult though these sometimes were. Rather, the evidence suggests that many of the Commission's shortcomings related directly to its position as a statutory monopolist and sole seller, committed by the government to serve an undefined public interest and required by the cotton textile industry to fulfil technical requirements of some complexity with at least the same precision and flexibility as the free market had done. Its position as a monopoly also made it peculiarly vulnerable to influence, complaints and criticism. Further, its position as a *statutory* body permitted the intrusion of non-commercial considerations into what were essentially commercial operations.

[1] *Annual Report*, 1952–3, paras. 24 and 40.

[2] The reaction of spinners in the first year of the option may have been influenced to some extent by exaggerated claims on behalf of private buying and by exaggerated criticisms of the Commission. But these influences could have had no effect in the second year.

BENELUX AND PROBLEMS OF ECONOMIC INTEGRATION

By W. ROBERTSON

BENELUX can be looked upon as the equivalent of a laboratory experiment in economic integration. This experiment, after a decade of economic diplomacy,[1] is a useful illustration of the problems which hamper the creation of a successful economic union between advanced economies under modern conditions. Some aspects are also relevant to any determined attempt to eliminate trade barriers which have been long established. The purpose of this paper is to describe the results and discuss the obstacles to the success of the experiment. It will be shown that Benelux has escaped none of the difficulties which might be expected to face a modern economic union. In addition, it has inevitably encountered problems peculiar to itself, the outstanding example of which has been the controversy over certain important canals and waterways. While in no way underrating such special problems, the paper will concentrate on those which are of more general interest.

I

It should be made clear from the outset that there are no pretensions of federalism in the basic Benelux agreements. Neither country has as yet sacrificed an element of national sovereignty, so that the degree of integration which has been achieved seems to give no concrete assurance of permanence. Nothing has been done which could not be undone without great difficulty. In so far as progress has been made, it has depended on the execution by national sovereign states of policies which have been agreed by inter-state organizations, or of policies which have contributed to integration although they have been independently conceived.

The results of the experiment up to the end of 1954 will now be discussed under two headings; first, internal relations, second, external relations.

Internal Relations

Internal trade is free of protective tariffs, according to the tariff agreement which came into effect at the beginning of 1948. But Benelux falls short of complete internal freedom of trade in the following respects.

[1] The experiment began formally on 5 Sept. 1944, with the signing of a Customs Convention between Holland and the Belgium–Luxembourg economic union. In this paper Belgium and Luxembourg are treated as one country in view of their over thirty years' old economic union.

First, trade across the internal frontier is still subject to the usual customs formalities. Second, trade in agricultural products is hampered by a special Agricultural Protocol, which is intended primarily to help Belgian farmers. According to this agreement, minimum selling prices are fixed in Belgium, and export taxes, equivalent to the difference between these minimum prices and Dutch export prices, are then imposed by the Dutch Government on exports of these goods to Belgium. The proceeds of this levy are shared between the two countries. In theory, the Belgian share is intended to finance improvements in the competitive ability of domestic agricultural producers, but doubts have been expressed about its practical application. The Dutch share, it has been suggested, has sometimes been used to subsidize exports of dairy produce to Britain.[1] In addition, agricultural imports into one country from the other may be limited by quotas, if the rate of imports is thought to be cutting seriously into the domestic producers' share of the market. Third, since excise taxes are still far from uniform, goods subject to these taxes pay a special equalizing levy at the internal frontier. Fourth, successful competition by producers of one member country in the markets of the other may be inhibited by an agreement embodying a so-called 'disaster' formula.

According to this formula, imports into either country from the other may be restricted if the industry in the importing country can prove that it is suffering from excessive competition from exporters in the other Benelux country. In the protocol outlining the scheme an ingenious attempt has been made to prevent too much use of the safeguarding formula. It is emphasized that new protectionist measures must be temporary, must be given a definite time limit, and must be arrived at by agreement.[2] When agreement cannot be reached by direct negotiation, the matter is referred to a tribunal of three members, one from each country and one nominated either jointly or by the President of the International Court of Justice. If a decision is delayed beyond a prescribed limit, the country seeking protection may temporarily limit imports of the goods concerned to the import rate of the six months immediately pre-

[1] P. Kuin. 'Lessons of Benelux', *Progress*, Autumn 1953, p. 160.

[2] The formula is complicated. The conditions for protection are as follows: either output of the industry to be assisted has dropped by 15 per cent. in relation to the average output of the corresponding periods in the two preceding years, and more than 75 per cent. of the decline is due to imports from the other member; or the volume of imports from the other member has increased by 60 per cent. or by an amount equal to 15 per cent. of output in the importing country compared with the average of the corresponding periods in the two preceding years.

The second condition is subject to several provisos; first, that production has not significantly increased in the importing country; second, that not more than 20 per cent. of the total increase in imports is due to imports from other countries; third, that the increase in imports from the other member is not at the expense of other countries; fourth, that imports from the other member constitute at least 7 per cent. of consumption in the importing country.

ceding the complaint. The pressure behind the negotiations can be deduced from the fact that special protective measures may be taken even if the formula cannot be sufficiently stretched. This loophole is supposed to apply only in a situation where an industry is in particularly acute difficulties.

The main deviation from free trade arises from the Agricultural Protocol, which effectively protects the Belgian producers from lower-priced Dutch goods. Most trade in manufactures is free of both tariffs and quotas, but it is indicative of the fragility of the common markets for industrial products that temporary protection had to be restored in 1953 to certain Belgian industries. This protection took the form of Dutch restrictions on the export of certain products to Belgium.

It cannot be assumed of course that pressure for protection will always come from Belgian producers only. Recent one-sided criticism of the tariff agreement may simply be a temporary phenomenon. It is unlikely that Dutch producers who are led to think in the future that they lose by Belgian competition, will be any more altruistic than Belgian producers. It is significant that the Commission on Wages and Prices found an example of the exclusion of certain Belgian agricultural products from the Dutch market apparently by means of private agreement among Dutch producers.[1] According to the Commission, this admittedly isolated experience demonstrated that producers' control over the marketing of agricultural products on the Dutch home market was sufficiently strong to keep out cheaper Belgian goods even without making use of the procedure laid down in the Agricultural Protocol.

It might be observed at this point that the contrast between tightly organized Dutch producers and loosely organized Belgian producers has been a frequent source of complaint by the latter on the ground of the alleged competitive advantage which the former possess. This applies particularly to agriculture, the strongly co-operative organization of which in Holland is supported in various ways by the government with a view to maintaining its competitive ability in foreign markets. In Belgium, on the other hand, co-operation in agriculture is much less common, and the government is much more interested in guaranteeing producers a satisfactory share of the domestic market than in promoting agricultural exports.

Labour movement between Holland and Belgium–Luxembourg is largely free, but a convention for completely unrestricted movement has not been finally settled. Until then, labour questions are regulated by the 1933 bilateral treaty. There are reciprocal social security arrangements for each country's nationals on the other's territory. In spite of

[1] Special Commission on Wages and Prices. Note on Conclusions, Annexe IV, p. 10.

demographic pressure in Holland, the Dutch colony in Belgium has changed little since the war.[1] Most migration since the war has been directed towards the United States and the British Commonwealth. Belgian labour, with the exception of frontier traffic, has not made much use of its freedom of movement to Holland. Lower wages have been given as the reason, but it is probably also due to an unwillingness to move under any circumstances.

Capital can be exported freely from one country to the other, subject to several conditions; first, transactions must be negotiated and transfers made on the free market for foreign exchange in each country;[2] second, Dutch securities newly acquired by Belgian citizens are not transferable outside Benelux; third, prior approval by the Dutch authorities is required for certain types of capital transfers. The limited experience of capital flows since their freeing in July 1954 shows a marked tendency for Belgian borrowers to resort to the Dutch capital market. The persisting difference in interest rates makes this a logical development.

External Relations

The Benelux countries have had a common tariff on imports from the outside world since the beginning of 1948. Revenue from import duties, however, is not pooled, as it is within the Belgium–Luxembourg union; each government retains the revenue which it collects at its own customs posts. Each country has retained full sovereignty over its external economic policy. Bilateral trade agreements have been negotiated independently, although there is provision for the co-ordination of treaty arrangements through the Council for Commercial Agreements. There are some indications of a common external economic policy in relations with O.E.E.C. countries and with the dollar area; for example, agreement has been reached on the commodities which may be imported freely from both blocs. But whether complete and lasting co-ordination can be achieved in the foreseeable future in external economic policy, apart from import duties, remains problematical.

Let us consider now the effects on trade of such progress as has been made towards an economic union. The development of intra-Benelux trade is shown in Table I, the geographical distribution of the trade of

[1] Symposium on European Integration. Contribution by A. Delpérée. *Economia Internazionale*, May 1953, p. 298.

[2] It has been pointed out to the writer that much of the movement of capital from Holland to Belgium has been effected through transferable sterling. A transfer of guilders to a Belgian borrower is followed by their conversion into sterling through E.P.U. at the official rate, under the arbitrage arrangements of May 1953. The Belgian borrower buys dollars with the sterling at the current rate for transferable sterling and sells the dollars for Belgian francs. The result is that although the transfer has taken place on a free market 'the guilder cannot in this market fall to a discount in terms of the franc appreciably greater than the discount of transferable sterling in terms of the dollar.'

Holland and Belgium–Luxembourg in Tables II and III. The high proportion of Belgian exports which went to Holland in 1950 was a phenomenon attributable to the relaxation of Dutch import controls at a time when home production was still inadequate and when Belgian producers had the advantage of unused capacity over other potential suppliers.

TABLE I

Intra-Benelux Trade

% of value

	Belgium–Luxembourg		*Holland*	
	Exports	*Imports*	*Exports*	*Imports*
1936–8 . .	11·6	8·7	10·9	11·6
1948 . .	15·4	8·2	15·8	14·8
1949 . .	14·6	9·3	13·4	14·4
1950 . .	22·4	10·0	13·7	18·5
1951 . .	17·9	10·9	14·8	18·4
1952 . .	15·3	13·2	15·7	17·2
1953 . .	17·8	13·7	15·6	17·2
1954 . .	21·0	13·0	14·0	17·0

TABLE II

Geographical Distribution of Belgium–Luxembourg Foreign Trade

% of value

Principal countries of origin or destination	*Exports*		*Imports*	
	1936–8	*1953*	*1936–8*	*1953*
Holland	11·6	17·8	8·6	13·7
France	16·8	8·0	13·3	11·1
Germany	11·2	9·3	11·4	12·5
United Kingdom . . .	13·9	7·8	8·4	9·0
U.S.A.	7·4	10·2	8·7	10·3

TABLE III

Geographical Distribution of Dutch Foreign Trade

% of value

Principal countries of origin or destination	*Exports*		*Imports*	
	1936–8	*1953*	*1936–8*	*1953*
Belgium . . .	10·9	15·6	11·5	17·2
France	6·6	4·5	4·6	3·8
Germany	15·8	14·1	21·3	15·7
United Kingdom . . .	22·2	10·7	8·1	9·4
U.S.A.	4·9	8·0	10·8	10·1

Sources. L'Économie Belge en 1953. Ministère des Affaires Économiques, Brussels.

Thereafter the proportion fell sharply, although it was still well above the pre-war level. Latest figures for 1954, however, show a recovery to 21 per cent. It remains to be seen whether this is another temporary change. Holland's share of Belgian imports has shown a gradual increase. Dutch exporters of agricultural products have benefited from their margin of preference, but not as much as they would have done in the absence of the Agricultural Protocol. Their share of Belgian imports of foodstuffs has risen sharply, from 14·5 per cent. in 1938 to nearly a quarter in 1952–3. In some cases, they have almost a complete monopoly. The outstanding example is butter, Belgian imports of which from Holland were only one-third of the total in 1937–8. The most striking aspect of Dutch trade with Belgium, however, is the remarkable increase in exports of finished manufactures which accounted for 45 per cent. of Belgium's imports from Holland in 1953 compared with only 16 per cent. in 1938. This change reflects the extraordinary expansion of Dutch industry in post-war years and the ability of Dutch manufacturers to break into Belgian markets. It is a development which was apparently not foreseen by Belgium and has inevitably modified some of the earlier enthusiasm for the union. Belgium has increased its exports of manufactures to Holland by less than was anticipated, but should at least derive some consolation from the fact that, since 1936–8, the value of exports to Holland has increased eightfold while total exports have increased only fivefold. There has been a mutual growth of trade particularly in textiles and metal products. Each country sent in 1953 about a quarter of its textile exports to the other, compared with 13 per cent. in 1938. Belgium's share of Dutch imports of textiles and apparel together rose from 28 per cent. in 1938 to about 40 per cent. in 1953.

So far as imports from non-Benelux countries are concerned, there do not appear to have been any drastic changes. Some foreign countries must have lost trade which they would otherwise have had, but this is the inevitable result of the general preference which each Benelux country accorded to the other. Probably France has lost some trade with both countries as a direct result of the union and Germany may have lost trade with Holland. To some extent the decline in the importance of Germany in Dutch imports reflects the expansion of Dutch industry. The growth of internal trade has proved consistent with the Benelux countries' maintaining their third place in intra-O.E.E.C. trade. Their combined share in 1953 was 15·5 per cent. compared with 13·6 per cent. in 1938, intra-Benelux transactions excluded. A striking feature of Dutch exports is the sharp fall in Britain's share. This seems to be due to changes on the part of Britain, probably in agricultural policy.

A lot of emphasis has been placed by Benelux writers on the expansion of intra-Benelux trade. This has been assumed to be an indication of

success, but it is not sufficient to point to an increase in mutual trade as proof that the tariff agreement has had an economically good effect. It would have been remarkable if there had not been such an increase. Some foreign suppliers were bound to be replaced by Benelux suppliers as a result of the preferential position which the tariff agreement conferred upon the latter. The fundamental question is whether the trade-diverting effect or the trade-creating effect is predominant. Although, in practice, it is impossible to give a clear-cut answer to this question, one may look at the case for and against Benelux in the following way.

The level of the common tariff in relation to the previous national tariffs is a crucial factor in determining the impact of the union on the rest of the world. According to Professor Viner, 'the tariff unification movement, in the 19th century and since . . . has been primarily a movement to make high protection feasible and effective for limited areas going beyond the frontiers of single states . . . it has not been a movement to promote the international division of labour'.[1] The Benelux tariff revision was intended to produce a new common tariff which would give the same degree of protection as the average of the national tariffs in 1939. This standard, a second-best alternative to the ideal of making up the common tariff out of the lower rates of duty, could not be fully maintained. It has been estimated roughly that the new common tariff is higher than the previous Dutch tariff, since a number of formerly free goods are now subject to duty.[2] This is one of the unfortunate results of trying to combine national tariffs in which the range of dutiable goods differs. It may be lower than the previous Belgian tariff in 1939, but the adoption of the *ad valorem* principle has meant an increase compared with the situation immediately preceding the union, since, as they were mainly specific, the effectiveness of the Belgian duties had been greatly reduced by the rise in prices. Perhaps this qualification is less significant than it seems, for one might expect the specific duties to be revised in any case to take account of the rise in prices. Compared with other tariffs, the Benelux tariff is probably moderate. Most duties are between 10 and 20 per cent., some manufactures and certain agricultural products, however, are subject to higher rates, within the 20–30 per cent. range. The general impression seems to be that the contracting parties can be acquitted of using the tariff revision deliberately to divert trade from foreign suppliers. But it seems that they secured agreement only by avoiding any reduction of protection *vis-à-vis* the outside world.

There is of course the possibility of loss through a diversion from foreign

[1] J. Viner, *The Customs Union Issue*, p. 68.

[2] 'Le Bénélux'. Study by M. A. Laubie for Institut National de la Statistique et des Études Économiques, Ministère des Affaires Économiques, Paris, p. 400.

suppliers to Benelux suppliers, in so far as the foreign product, without the duty, may cost less than the Benelux product. The lower the original tariff, however, the smaller the loss from the switch to higher-cost union suppliers. On the other hand, it is equally true that the gain from the supplanting of higher-cost by lower-cost union suppliers will also be the smaller, the lower the original tariff. For a considerable proportion of the foreign goods subject to the Benelux tariff, one would not expect a significant loss from the diversion of imports from foreign suppliers. The main potential scope for an economically perverse effect seems to be confined to agricultural products and such manufactures as textiles and clothing, which come within the higher range of duties.

The rest of the world is naturally interested in the ultimate trade-creating effect of the union. There are some grounds for arguing that, if the experiment can be carried further, a better allocation of resources can lead to a larger volume of foreign trade than in the absence of the union. But it is essential that more integration should be achieved than has been possible within the first decade, otherwise the main result will be the trade-diverting effect. The chance of new trade lies at least in the potential Benelux demand for raw materials. Both countries depend largely on such imports, for which substitutes cannot be found in either country. An increase in internal productive capacity, therefore, through a better allocation of resources would tend to increase the demand for imported raw materials. As has been pointed out by one writer on Benelux,[1] the extent to which this comes about depends largely on the elasticity of foreign demand for Benelux goods, since the economies of both countries are likely to remain highly orientated to non-Benelux trade. The effect of the union on the demand for foreign manufactures, especially consumer goods, is more doubtful, and any judgement must be highly speculative. If industrialization continues in Holland and if some degree of integration with the Belgian economy is achieved, it is possible that a greater variety of production in the larger economic space will ultimately reduce the marginal and average propensities to import foreign manufactures. In that case the rest of the world will have to look to the increase in aggregate Benelux income and the demand for raw materials for a favourable trade-creating effect. The fact that the bulk of imports consists of materials for industry suggests that any adverse effect on the demand for foreign manufactures will be more than offset. But this can be true only in the long run and, if experience so far is any guide, it may be a very long run, particularly if we may assume that agriculture is a leading potential source of gain from changes in the allocation of resources.

[1] J. van der Mensbrugghe, *Les Unions économiques: réalisations et perspectives.* Institut des Relations Internationales, Brussels, 1950, p. 288.

II

That it should still be necessary in discussing Benelux to emphasize what has not been achieved rather than what has been achieved may be considered a gloomy commentary on the obstacles which limit the success of an experiment in contractual union. It is true that some doubts have been expressed about the fundamental soundness of the experiment in the sense that Belgium and Holland may not be appropriate partners for a customs union.[1] Any attempt to judge them, however, in the light of contemporary economic analysis, comes up against a conflict between two schools of thought about the meaning of 'appropriate' in this context. One school favours complementarity, the other competitiveness. There is perhaps consolation in the fact that elements of complementarity and competitiveness are so mixed in the economies of the Benelux countries, that simple solutions to the theoretical problem of a customs union are probably irrelevant in any case.

That there are potential gains to each country from the experiment is not merely an expression of faith. There is scope for jointly planned development of the coal and steel industries.[2] In manufacturing industry there is scope for specialization on different industries and on different lines of production in the same industries, as the development of mutual trade in textiles and metal products seems to indicate. The expansion of industry in Holland does not in itself constitute an insuperable barrier to the experiment. The wider the range of production in each country, the more easily should labour be able to find alternative employment as industries adjust themselves to intra-Benelux competition. Admittedly, the prospect of achieving some degree of integration of the national agricultural industries is clouded by the heritage of protection in Belgium and the subsidization of exports in Holland. Both industries have a considerable similarity of output, but, potentially, there could be more specialization in a free market. Although agricultural integration inevitably arouses scepticism, it is possible that, if the experiment can gradually progress in other directions, the less efficient agricultural producers might tend to come under more pressure from domestic consumers than if the experiment were abandoned or had never been started.

During the earlier post-war years, negotiations were dominated by problems arising from the marked contrast between Holland's persistent balance of payments difficulties and the relative ease of Belgium's external position. The relative weakness of the Dutch position until 1952

[1] K. C. Edwards, 'The Geographical basis of the Benelux Union', *Tijdschrift voor Economische en Sociale Geografie*, Feb. 1954, p. 41.

[2] This may now be attainable through the European Coal and Steel Community, if not directly by intra-Benelux negotiations.

is brought out by the ratio of international reserves to imports in the two countries. The contrast is particularly striking in 1948, as Table IV shows.

TABLE IV

International Liquid Reserves as Percentage of Imports

	Netherlands	*Belgium*
1947	14	46
1948	11	47
1949	22	55
1950	19	39
1951	17	41
1952	43	44

The Dutch methods of dealing with the balance of payments problem were very like those of the British Labour governments; Belgium on the other hand showed the characteristics of a relatively liberal economy. The resultant differences in internal and external policies undoubtedly checked progress towards an economic union. But any excuses for delay which could be based on the persistent weakness in the Dutch balance of payments position lost their force in 1952, when exports expanded greatly and a very large current account surplus emerged. To some extent the post-war balance of payments problem may have obscured other obstacles to the union. No doubt if the problem had been overcome earlier, capital movements would have been freed before 1954 and Dutch import controls would have been modified. But it is equally probable that the competitive weakness of certain Belgian industries would have led to counter-measures at an earlier stage. Further, there seems no assurance that a mutually satisfactory solution to other problems would have been any nearer than it was at the end of 1954.

Let us consider what the other obstacles have been. First, the wage-price controversy.

Two main elements can be distinguished in this controversy. The first concerns relative wages and prices in general, the second relative wages and prices in particular industries. Both appear to be normal sources of controversy in an experiment which involves the drastic scrapping of trade barriers between countries which have been accustomed to pursue independent policies. In this case, the controversy has been sharpened by the unexpected conversion of Belgium into a relatively high-wage economy compared with its pre-war position and also compared with the Dutch economy. The fact that the guilder was devalued by more than the Belgian franc in 1949 tended of course to put Belgian industry at a still greater competitive disadvantage.

Much has been made of the argument that the general level of wages and prices in Belgium is so much higher than in Holland that the difference is incompatible with an economic union. The figures quoted by the Joint Commission on Wages and Prices showed that in 1951 average hourly industrial wages in Belgium were about 30 per cent. higher than in Holland. If the Commission's figures are corrected for subsequent wage changes, the difference seems to have fallen to about 25 per cent. by the third quarter of 1954. Little information has been available on comparative labour costs. The Commission opted out of any analysis on the basis of fragmentary knowledge. So far as average industrial productivity is concerned, one may hazard the guess that productivity in both countries is at present advancing at approximately the same rate. Between 1948 and 1952, at least, average industrial productivity per man is estimated to have risen by about 18 per cent. in both countries.[1] It is impossible to say what the relative rates of growth were before 1948, but it is perhaps a reasonable assumption that Belgium's much smaller losses through wartime destruction enabled productivity to rise faster than in Holland, at least temporarily. Certainly there is a belief in Belgium that such estimates of productivity as have been made since the war tend to be too low.

If it is argued that there is a general wage-price disequilibrium within Benelux, one would naturally assume that attention would be drawn to a currency revaluation as a possible remedy. Further, it would be natural that the question of currency revaluation could only be considered in the light of each country's position in relation to the general level of wages and prices in its principal trading partners, since each country still conducts more than 80 per cent. of its foreign trade outside Benelux. Neither country, however, has admitted that its currency could find a more appropriate value. Yet if one accepts the conclusion of the Commission that there is a wage-price disequilibrium between the two countries, it is difficult to see why a similar disequilibrium between one or other country and the rest of the world should not also be admitted.

Whatever verdict is reached on this aspect of the controversy, a once-for-all adjustment of the guilder-franc rate is not likely to be a sufficient guarantee of the long-run success of Benelux as a free trade bloc. If a continuous solution to possible divergences in general wage-price levels is necessary, it looks as if flexible rates are inevitable. At the very least, adjustments of exchange rates will be required from time to time, if the partners to the contractual union want both freedom to shape their own policies and freedom of trade between them. Unfortunately, it is evident that the climate of opinion is not favourably disposed towards the

[1] A. Maddison, 'Industrial Productivity Growth in Europe and in the U.S.A.', *Economica*, Nov. 1954, p. 311.

exchange rate solution. The alternative, therefore, seems to be close co-ordination of the domestic policies which have most influence on the general wage- and price-level in each country. So far as wages policy is concerned, there is a marked difference in attitude between the two countries. On the one hand, post-war Belgian governments have preferred to interfere as little as possible with employer-worker wage-fixing. On the other hand, their Dutch partners have persistently stuck to a policy of supervision over wages, admittedly with the agreement of employers and workers. Whatever modifications are made to the detailed working of this policy, the general principle is unlikely to be abandoned. On this issue, no compromise seems to be the rule.

The second aspect of the wage-price controversy has been the charge of 'unfair' competition which has been frequently used by Belgian industrial and agricultural groups against their Dutch competitors. Pressure from these groups has checked the advance towards free trade in certain sectors. Their case seems to be based to a large extent on the argument that Dutch producers have certain government-conferred advantages which are not enjoyed by Belgian producers: for example, tax rebates or subsidies. The observer naturally approaches the complaint of 'unfair' competition with some degree of scepticism. One suspects that, fundamentally, the trouble has arisen over the inevitable threat to certain categories of producers from the loss of protection. To some extent their complaints can be discounted in advance. Some producers were bound to feel intra-Benelux competition more than others, and would do so even if there were no apparent problem of different levels of wages and prices. Differences in productive and marketing efficiency would naturally have this effect once trade barriers were removed and temporary shortages were overcome. The fact that only limited sectors of industry have suffered unemployment which could be attributed to Dutch competition, seems to be an indication that producers in these sectors have simply lagged behind others in adjusting themselves to the new situation which the tariff agreement has created.[1] This seems such a natural phenomenon that it is almost superfluous to mention it. But of course it is a major threat to any serious attempt to demolish long-established trade barriers.

For the difficulties of these industries exchange-rate changes are no solution. Nor can they be relied on to put Belgian agriculture on a competitive basis with Dutch agriculture in a free market. In these sectors of

[1] Two members of the Belgian delegation on the Special Commision on Wages and Prices pointed out that the producers who raised the biggest outcry were also those who showed the least constructive attitude. Cf. Conclusions of the Special Commission, p. 17. The joint Trade Union conference of June 1953 was also hostile to producers who failed to adapt themselves to the new situation. Cf. summary of the Bois-le-Duc conference in *Chronique de politique étrangère*, Brussels, Mar. 1954.

the Belgian economy the experiment in contractual union has uncovered, or threatened to uncover, a structural disequilibrium. Even if we allow for the 'artificial' inequalities which are inherent in different degrees and forms of state intervention, it is unlikely that considerable changes in the output of agriculture could be avoided in Belgium if free trade were taken seriously. Some industrial producers, however, might be brought to an approximately competitive position by the changes in indirect taxation which were proposed by a Benelux advisory council. According to the Joint Commission, the failure to realize the proposed co-ordination of indirect taxes has been partly responsible for the difficulties of some branches of the Belgian textile industry in intra-Benelux trade.

Second, there have been difficulties over monetary policy, particularly during the earlier years of the experiment. Disagreement has taken two forms: on the one hand, different attitudes towards the weight which should be assigned to monetary policy as a form of economic control; on the other hand differences in the use of monetary techniques, particularly qualitative and quantitative credit controls. The former seem to have lost significance during the general revival of monetary policy which brought Holland into line with Belgium, a post-war pioneer in this respect. But whether the two countries will continue to remain aligned in this respect is problematical. Even if their attitudes did not diverge, the latter differences could remain an effective obstacle to monetary co-ordination. It is true they have not prevented an agreement on the freeing of capital transactions, subject to the conditions already mentioned. This shows that the monetary authorities in both countries are now prepared to accept a certain measure of mutual discipline. Differences in interest rates and in credit conditions will tend to be kept within a moderate range. The important question is whether the co-ordination which free capital movements will impose will stand up to hard times.

Third, important fiscal problems have arisen over differences in the structure and burden of indirect taxes. So far as direct taxes are concerned, differences do not appear to be great enough to hamper seriously the experiment and both governments have agreed not to take new measures which would accentuate these differences. It has been explicitly agreed that there is no need to work for an absolutely uniform system of taxation. This is a reasonable conclusion in the light of the experience of federal states where there is usually scope for limited differences in the fiscal structure of the various provinces. As we have pointed out, however, differences in certain types of indirect taxation justify to some extent the complaints of Belgian producers that they are penalized compared with their Dutch rivals. This applies particularly to the different rates of sales taxes. Agreement in principle has been reached about their unification

but there is apparently no willingness to overcome the budgetary difficulties which have prevented the agreement coming into force, although this would be one effective way of blunting the criticism of business pressure groups. The tax adjustments which have been recommended by a joint commission would, it is calculated, involve a substantial loss of revenue to both Belgium and Luxembourg, while for Holland they would imply a rise in the fiscal burden of the sales taxes. Luxembourg has persistently refused to accept the agreement unless the proceeds of the sales taxes are pooled and shared on an agreed basis, at least between herself and Belgium. While it is obvious that the agreement may involve some tax changes which are not palatable to taxpayers, one cannot help feeling that administrators have not shown sufficient ingenuity in overcoming fiscal obstacles, although this may simply reflect a passive antipathy on their part to the experiment. Where changes in fiscal policy implied a break with traditional practice, they might be made acceptable to majority opinion by sufficient publicity for the potential gains from the experiment.

Fourth, there have been difficulties over investment policy. Post-war Dutch governments have been more actively interested in encouraging industrial investment than have been their partners. Population pressure, losses of invisible foreign income, and unfavourable changes in foreign markets have tended to push Holland towards a greater degree of industrialization than before the war. The attitude towards the prospects of new or expanded industries has been optimistic. Belgium has not been subject to the same pressures, and has tended to favour consumption at the expense of investment. In this policy the terms of trade have been relatively favourable, whereas Holland has been at a disadvantage in this respect, partly because of the 1949 devaluation.

This difference in attitude has certainly affected the workability of the scheme for the co-ordination of major investment decisions in certain key industries. There are other obstacles to this scheme, but, before considering them, it is necessary to outline the scheme itself.[1] The underlying idea was that governments and industrialists should co-operate in discussing certain types of investment in order to avoid the unnecessary duplication of productive capacity. It was suggested that consultation should at first be confined to a limited number of manufacturing industries and to certain public utilities, such as docks and inland waterways, the development of which in each country could have a significant effect on the other's economy. An advisory Commission for the Co-ordination of Investment recommended that the industries selected for this consultation procedure should satisfy the following criteria; first, that their products should be

[1] The following summary of the scheme for the co-ordination of investment is based on the detailed account by A. Laubie in the study already quoted, pp. 378–85.

'sufficiently homogeneous'; second, that there should be a tendency to over-investment if producers in each country acted independently. So far as individual projects in the relevant industries are concerned, attention was to be focused primarily on those which were deemed to involve a net increase in capacity. The utility of these projects from the point of view of Benelux was to be judged according to the estimated future trend of internal and external demand. But in order to allow for changes in the structure and geographical distribution of the industries concerned, it was agreed that, although a project might not be justified in the light of the ability of existing capacity to meet demand, it might be approved on technical grounds. If a project were to embody a significant technical innovation which would lower production costs, then a net addition to existing capacity might be permitted. It was suggested, however, that the improvement should be significant, in order to compensate for the disturbance which might be caused to existing resources in the industry.

Negligible progress has been made along the lines sketched out by the Advisory Commission. According to a recent estimate, there have been only about thirty cases of joint consultation on investment projects since the beginning of 1948.[1] That serious difficulties should have arisen is not surprising when one considers the minimum requirements for the effective operation of such a scheme in the light of contemporary economic policy and opinion in the contracting countries. Investment in certain directions would have to be subject to the ultimate control of an inter-governmental authority, which would require both the information and the ability to reach difficult economic decisions affecting the development of each country. Post-war Belgian governments in particular have been unwilling to arm themselves extensively with powers to interfere directly with private business decisions. Further, the criteria for intervention obviously raise acute problems of interpretation. Nevertheless, in spite of these significant weaknesses, the concept of the scheme has much to recommend it, particularly in the case of industries where development involves large-scale expenditure on fixed capital, the profitability of which depends on its exploitation over a very long period. In such industries there is much to be said for government intervention. It seems equally desirable that governments should take into account the repercussions of such investment on other countries. If the Benelux countries really wish to allocate their capital resources in the best way, they would be well advised to find ways of making better use of their Investment Commission's proposals. There would be advantages from this both in intra-Benelux trade and in trade with the outside world.

[1] *Chronique de politique étrangère*, Institut des Relations Internationales, Brussels, Nov. 1954, p. 672.

III

If judged strictly by the criteria of an economic union, the Benelux experiment falls considerably short of success. There is no surrender of sovereignty in any economic function of government to any common organization. There is only limited co-ordination of decision on important economic issues. The tariff agreement is subject to important qualifications. To maintain the results which have been achieved during a decade, depends precariously on the willingness and ability of successive national governments to interpret their internal and external policies in the light of their influence on intra-Benelux relations. The participating countries will no doubt continue to be inhibited by the traditional mode of thought and action of public authorities within the confines of the nation state, by the lack of a strong popular demand for progress, and by the persuasive activities of industrial and agricultural pressure groups.

Probably it was a mistake of the protagonists of Benelux to think and plan in terms of anything as comprehensive and binding as a union. It might have been better if attention had been focused on more limited objectives, somewhat on the lines proposed by Norway at the 1954 session of the Nordic Council.[1] For example, there might have been success in encouraging the creation of joint enterprises like Scandinavian Airlines, or similar joint enterprises in coal, iron and steel, atomic energy, chemicals, and textiles. This functional, if less idealistic, approach may still offer a fruitful outlet for experiment by the Benelux countries.

One final point might be made. The Benelux countries seem to have appreciated only tardily the need to assist firms upon whom falls the main burden of adjustment to drastic changes in protection from foreign competition. A Joint Readaptation Fund, agreed upon in 1953 at the time of the negotiations for the safeguarding formula, is a belated and perhaps inadequate attempt to remedy this deficiency by offering financial help on a temporary basis to these firms to raise their productivity. If drastic reductions in protection are seriously contemplated in other European countries, similar government action seems necessary on a large scale to 'overcome, deflect or override' the opposition of the losers by such government-induced changes.

[1] 'Co-operation in Scandinavia', *Economist*, 28 Aug. 1954, p. 672.

THE HOLDING OF ASSETS: 'GAMBLER PREFERENCE' OR 'SAFETY FIRST'?

By R. A. D. EGERTON

IT is a common reproach against Professor Shackle's theory of investment decisions that it is not possible to show with its aid that it may be sensible in some circumstances to undertake more than two projects, or to hold more than two assets; and it seems to be true that for any theory in which the expectations about the outcome of a project are deemed to be reduced to two values (all other considerations being excluded) any desired combination of prospective yield and risk can be obtained from two projects or assets. Shackle's construction may be given by way of example.

For any investor a gambler indifference map is drawn, on which are shown the combinations of focus gain and focus loss which are equally stimulating (the gambler indifference curves). On the assumption that an increase in focus loss has to be compensated by a more than proportional increase in focus gain, these curves are drawn as sloping upwards to the right at gradually steeper inclines. One of the curves will pass through the origin so that, if money is assumed to have a zero outcome, no project for which a straight line joining its focus outcome to the origin falls to the right of the origin indifference curve will be considered worth undertaking. Similarly, if an investor is choosing between two or more possible projects, he will choose that one in respect of which the straight line which is drawn to join the focus outcome to the origin touches the highest indifference curve. This straight line represents a combined holding of the asset and cash—the nearer the origin the larger the proportion of cash held, and vice versa. A straight line drawn between any two focus outcomes will also have meaning. It will represent a composite holding of the two assets, and as can be seen in Fig. 1, it may be the case that some point on this line will be on a higher indifference curve than any point on either of the straight lines joining the focus outcomes to the origin.

In Fig. 1, the points X, Y, and Z represent the focus outcomes of three asset holdings. If an investor is permitted to choose to hold only one asset, or one asset and cash, he can reach the highest possible indifference curve by holding X and cash, in the proportions denoted by the point P on the diagram. If, however, he is allowed to hold more than one asset (other than cash), he can reach the highest possible indifference curve by holding a combination of X and Y, in the proportions denoted by the point Q.

This diagram also illustrates the fact that it is not sensible to hold more

than two assets. If some of either of the assets represented by X and Y were given up in exchange for some of the asset represented by the point Z, the investor would necessarily move to a lower indifference curve. This is an example of the geometrically inevitable conclusion that it is impossible to find any combination of three assets which will place an investor on a higher, or as high an, indifference curve as he can reach if he holds only two of the three assets. And this conclusion seems to be applicable to any theory in which the range of possible outcomes of an investment project or asset holding are reduced to two values such as focus gain and focus loss, or yield and risk, or expected profit outcome and expected loss outcome.

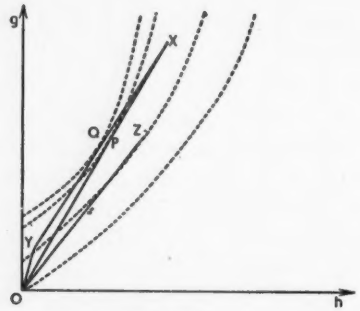

FIG. 1

That this conclusion is unsatisfactory, in the sense that it is at variance with common and apparently reasonable practice, is generally recognized, and not least by Shackle, who writes in the preface to the second edition of his book:[1] 'In his review article in the *Economic Journal* for March 1950 Mr. Charles Carter pointed out that the results of chapter iv are absurdly at variance with observation. Yet he did not impeach the logic of the argument. The source of the unrealism must therefore presumably lie in the assumptions.' The assumption which Shackle thinks responsible for producing the unreasonable conclusion is that the value of money is constant, and hence that money is an asset yielding neither gain nor loss. He adds this paragraph at the end of chapter iv in the 2nd edition:

> The argument of this chapter is based on the definition of gain and loss as gain and loss of *money*. We have assumed, that is to say, that there is one kind of asset, called money, whose nature and the nature of the individual's ideas of gain and loss are such that by holding the whole of his wealth in the form of this asset he can avoid all fear of loss at the cost of foregoing all hope of gain; or by holding some part of his wealth in this form he can be rid of such fears and hopes in respect of that part. This assumption may at some historical dates be realistic, as when a measure of the 'general price level' has been fairly constant for a long time. In contrast with

[1] *Expectation in Economics*, Cambridge, 1st ed. 1949, 2nd ed. 1952, p. xiii.

this, we might assume the individual to feel that no single kind of asset could be relied on not to suffer a large and rapid fall of its rates of exchange for most other kinds of asset. If in that case he thinks of loss in terms of general command over goods of all sorts, that is, as loss of some amount of general purchasing power, and if there is some degree of such loss as would entail 'catastrophe' for him, and if we assume that he will select his relative quantities of different kinds of assets with the sole purpose of reducing his fear that such catastrophe may occur, he must resort to 'spreading of risks'. The principles on which this ought to be done have been discussed by Mr. A. D. Roy, of Sidney Sussex College, Cambridge, in an extremely distinguished article called 'Safety First and the Holding of Assets'.[1]

Before considering Mr. Roy's theory, it is necessary to discuss the implications of the passage just quoted. It is implied by Shackle that, on the one hand, there is no reason to spread risks if the value of money is constant; and, on the other hand, that the only reason for spreading risks is that the purchasing power of money is falling, or is thought to be likely to fall. So far as the first point is concerned, there is no evidence that the habit of risk-spreading is recent, caused by a fear of inflation during the recent war and postwar years. Rather the argument can be found as far back as the mid-nineteenth century in discussions about joint-stock limited liability companies, if not earlier. Looking at the reverse side of the implication, that the reason for risk spreading is that the value of money is falling, or is thought likely to fall, it is interesting to notice that this assumption can be introduced to the Shackle gambler indifference map, and does not appear to alter his conclusion that it is sensible to hold only two assets. The only amendments which (it appears) have to be made are that money is represented, not by the point of origin, but by some point to the right of the origin on, or possibly below, the x-axis and that focus gain and focus loss are measured in real terms. A combined holding of cash and one asset will thus be represented by a point on the straight line between the focus outcome of the asset and the focus outcome (to the right of the origin) of money. If such a diagram is drawn it can be seen that it is less likely[2] that an investor will wish to hold money, but it cannot be seen that he will wish to hold more than two assets—other than money. To put the matter more generally: the Shackle theory cannot explain risk spreading, whatever assumption is made about the value and expected value of money; and if it is the case that an investor thinks himself faced with catastrophe, in the sense that all the available assets and projects are associated with focus losses of more than a certain size, there is no policy which Shackle can suggest he should pursue in order to insure against the occurrence of the catastrophe.

The Shackle theory cannot explain risk spreading because of the way

[1] Op. cit., p. 93. A. D. Roy, 'Safety First and the Holding of Assets', *Econometrica*, July 1952.

[2] Than if money had a zero focus outcome.

in which it assumes an investor to look at the total focus outcome of a composite holding of assets. An investor is assumed to think that either all the focus gains or all the focus losses will occur; and, if he does think in this way, there is no advantage to him in holding more than two assets. But it is doubtful if an investor would think in this way unless he believed there to be a high degree of positive correlation between the price movements of the assets. If an investor believed that there was no, or only slight, correlation between the price movements of certain assets it would be curious for him to consider the outcome of holding a composite portfolio of them as being simply the sum of their separate focus outcomes, because it would presumably cause him considerable surprise if they all did yield either their focus gain, or if they all yielded their focus loss. Where any two assets have a high degree of positive correlation in their price movements, Professor Shackle's method of aggregation is appropriate; but when two assets have a high degree of negative correlation in their price movements, the total focus outcome of a composite holding will be found—not by adding the focus gains and the focus losses—but by adding each focus gain to the focus *loss* of the other. But either method of addition is strictly proper only when the correlation coefficient (either positive or negative) is unity.

In Mr. Roy's article is first found the doctrine that the choice of a composite holding of assets depends not only on the outcomes of the individual assets, but also on the correlation between the price movements of the individual assets. Roy is specifically concerned with any investor whose aim is to guard himself as securely as possible against the possibility that his resources may fall to less than a certain value in 'real' terms, which would be regarded by the investor as being equivalent to disaster. The article is highly mathematical and cannot satisfactorily be condensed: it will have to be sufficient to summarize his conclusion in respect of an important case—that in which an investor is faced with a number of possible assets, about which he has identical expectations, and between whose price movements there is no correlation.

Assume that an investor holds resources to the value of k in 'real' terms, and that he aims to be as secure as possible against the possibility that they will fall in value to d. An investor is supposed to make his best estimate of the future price of each asset, together with an allowance for the extent to which he thinks this best estimate may be wrong (this is a rough equivalent to the standard error of the best estimate). These two factors are denoted by p and α respectively. His conclusion, for the special case in which there are no price correlations and expectations about the prices of all the assets under consideration are identical is as follows:

> If, further, our expectations about all assets are the same, we are not indifferent

as to which assets we hold. For although we cannot affect the expected outcome by varying our holdings, we can affect our uncertainty about the outcome. This will be least when we spread our resources equally among all the assets.

If we hold only one of the exactly similar assets the upper bound of the chance of disaster would be $\alpha^2/(p-d/k)^2$, while if we held all n of them in equal amounts this upper bound would become $\alpha^2/n(p-d/k)^2$. This is a demonstration of the folly of putting all one's eggs in one basket. (p. 439.)

However, the conclusion that the more assets an investor holds, the more secure his position is against disaster, is valid only in the case in which all the assets have the same expectations in terms of p and α, and there is no correlation between the price movements of the assets. Formulae are presented in the article from which can be derived how much of each asset should be held—or how large a liability should be incurred —to be as secure as possible from any given level of loss. It is also shown how an investor can discover how secure he would be. The determinants are p, α, d, and k, and the degree of correlation, r, between the p's.

The importance of Roy's article is twofold. In the first place he draws attention to the fact that many investors may be possessed of a utility function of such a form that they maximize expected utility with reference to criteria different from those assumed by Shackle. Shackle assumes an investor to be seeking an ideal balance between the hope of gain and the risk of loss—by balancing yield against risk, or focus gain against focus loss, &c. The case which Roy explicitly considers is that in which an investor maximizes utility with reference to security against a maximum loss or minimum gain. Not that Roy's analysis is limited in application to this case; for his theory can take in the balancing of gain against loss by making the postulated disaster level dependent on the average level of the best estimates of the prices of assets. If the disaster level is assumed to be lower, the higher the average level of asset prices, an investor is in effect given the same form of utility function as that assumed by Shackle and the probability theorists. The other point of importance in Roy's article is that he does succeed in showing that normally a large portfolio of assets is more secure against disaster than one containing only one or a few assets.

The theories of Shackle and Roy are not really competitive with one another: rather Shackle's theory can be regarded as a special case of the other. This can be demonstrated if certain assumptions are made about the equivalence of the concepts used. It is plausible to suppose that there is a rough equivalence between Shackle's focus gain and Roy's best estimate of price plus its standard error, and between Shackle's focus loss and Roy's best estimate minus its standard error. Shackle's concepts are net, being expected gross returns less current value of resources, and are expressed in money terms; so that to make a comparison with Roy's concepts it is necessary to convert them to gross figures, valued in real

terms. If the gross value in real terms of focus gain is written g', and the gross value of expected loss in real terms is written h', the following equalities may be suggested:

$$g' = p+\alpha, \qquad h' = p-\alpha, \qquad p = \frac{g'+h'}{2}, \qquad \alpha = \frac{g'-h'}{g'+h'}.$$

From the manner in which Shackle combines the focus outcomes of any two assets, it may be said that he is considering the case in which the correlation between the changes in the prices of assets is equal to unity. While this correlation could not exist for all assets, it could conceivably exist for those assets whose prices at a certain time were expected to be greater than the critical level. If, as does Shackle, it is assumed that an investor does not incur liabilities in terms of assets whose real value is expected to fall, the problem of asset holding is reduced to the problem of which to hold out of assets whose price correlation is equal to unity.

Roy considers the case in which an investor wishes to be in as secure a position as possible against the risk of disaster. Therefore it should be possible to draw on a diagram, having axes p and α, a series of curves each composed of those combinations of p and α which provide equal security against disaster. In order to compare Roy's theory with that of Shackle it is necessary to redraw this diagram with axes g' and h'. If it is found that the curves of equal security drawn on this diagram are of the same shape as Shackle's gambler indifference curves, Shackle's theory will be shown to be equivalent to Roy's theory in the special case where the price correlation between the assets available is equal to unity.

Unfortunately it is not possible to use Roy's general formula to plot equal security curves on the gambler indifference map, because when the correlation between the prices of assets is equal to unity the general formula used by Roy becomes indeterminate. According to Roy: 'the upper bound of the probability of disaster, is equal to

$$\frac{1}{[a-(d/k)b]'-W^1[a-(d/k)b]}$$

or

$$\frac{|W|}{\sum_{i=1}^{n}\sum_{j=1}^{n}\frac{(p_i-d/k)}{\alpha_j}W_{ij}\frac{(p_j-d/k)}{\alpha_j}}$$

where W_{ij} is the cofactor of r_{ij} in the matrix W and $|W|$ is the determinant of W'. But when r_{ij} is equal to unity, both W_{ij} and $|W|$ become zero, so that the formula cannot be used to find the degree of security (which is defined as 'the upper bound of the probability of disaster').[1]

[1] Op. cit., p. 437. a is written for the column vector $(p_1/\alpha_1, p_2/\alpha_2, \ldots, p_n/\alpha_n)$; b is written for the column vector $(1/\alpha_1, 1/\alpha_2, \ldots, 1/\alpha_n)$.

Since the degree of security given by the holding of positive quantities of two assets, when their price correlation is unity, cannot be greater than the degree of security gained by the holding of one asset, it is appropriate to use in the diagrams the formula for the degree of security given by Roy for use when only one asset is held. This formula is $\frac{(p-d/k)^2}{\alpha^2}$.

Equal security curves, when drawn on a diagram having as axes α and p (see Fig. 2), will have the same general shape, and will be a series of upward-sloping straight lines having d/k as origin.

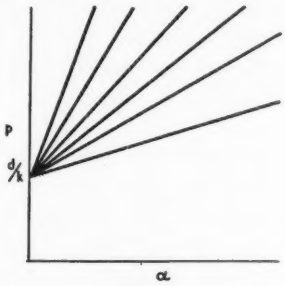

FIG. 2

These curves look very different if translated into Shackle's terminology. The axes of the diagram become g' and h', and the security formula becomes:

$$\left[\frac{(g'-h')}{\frac{1}{2}(g'+h')^2-k}\right]^2.$$

All points on any straight line with origin o, o, will have the same standard error $(g'-h')/(g'+h')$. Of these lines, that lying at 45° will have the minimum standard error, and the more any other line diverges from this angle the greater the standard error of the points on that line. Since g' must be greater than h' (the gross equivalent of the focus gain must be greater than the gross equivalent of the standard loss) only those lines having a gradient of more than 45° need be considered.

The various combinations of g' and h' (price lines) which will give any one p, will be denoted by a series of straight lines each cutting the x-axis at p, 0, and the y-axis at 0, p. Since, again, g' must be greater than h', only those combinations of g' and h', on each price line, which are above and to the left of the line drawn from the origin at 45° need be considered.

The equal security curves can now be drawn. For any price line, the position of maximum security will lie at the point of intersection with the line of minimum standard error, and the value of g' will rise increasingly as h' falls. Thus the equal security curves will be convex to the origin, and approach the y-axis asymptotically. (They will actually reach the y-axis

if $(g'+h')^2$ equals $2d$.) They will have this general shape whatever the determinant of d (and even when $d = 0$) and are illustrated in Fig. 3.

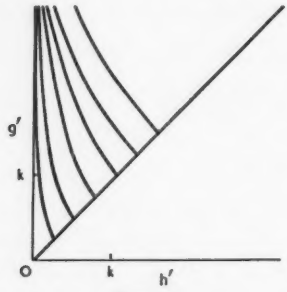

FIG. 3

This last diagram is a mirror image of the Shackle gambler indifference map with focus gain and loss measured in gross terms, and with increasing focus loss measured from right to left, instead of from left to left to right as in Shackle's map. Taking the original value of the investor's resources k as origin, and measuring increasing (net) focus loss to the right along the x-axis, the diagram becomes fully equivalent to the gambler indifference map, except that focus gain and focus loss are measured in real terms instead of in money. Thus Fig. 4 below.

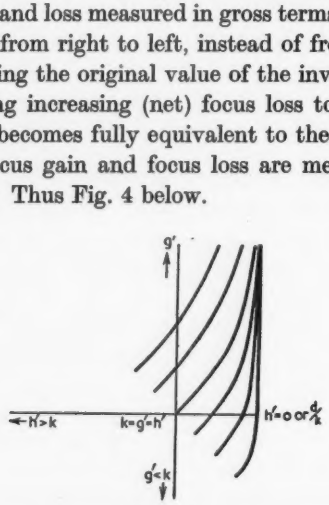

FIG. 4

The diagram above allows for two situations not illustrated in Shackle's original map. In the first place the map is extended to cover those assets which have either a negative focus gain or a negative focus loss. In the second place the indifference curves become close together at that focus loss which is equivalent to a gross return of d/k, or, if d/k is zero, to a gross return of zero. There is no reason to expect that these additions would be drawn in a significantly different manner by Shackle. Indeed, the similarity between the curves drawn in Fig. 4 above on the basis of Roy's assumptions and the gambler indifference curves of Shackle is striking. Particularly

it is worth noting that the equal security curve in Fig. 4 which passes through the origin ($g' = h' = k$) has an initial angle—at the origin—of marginally more than 45°, and appears to be identical in shape with Shackle's origin indifference curve.

This does not imply that all investors will have gambler indifference curves of exactly the same shape—the shape of the equal security curves. Rather, if the indifference curves of an investor have this special shape, it may be said that he maximizes the expected utility of investments in a special way.

It seems possible that if on the same map were plotted both equal security curves and the gambler indifference curves of an investor, his attitude towards risk bearing could be established in some sort of objective manner. For example if all indifference curves sloped less steeply than the equal security curves starting from the same points, it would seem reasonable to say that he was prepared to surrender security for possible extra profit in certain proportions. Other relationships between the gambler indifference curves and the equal security curves could also, no doubt, be given suggested interpretations; but it would make this article unduly long to begin considering these possibilities now.

The final point which must be made is this. This article has been concerned to show that the constructions of Shackle and Roy become similar *in one special case*—when the correlation between the price changes of the various assets which can be purchased is for some reason equal to unity. That the constructions are similar in this case only provides the limitation to their similarity, and to any use of the equal security curves and gambler indifference curves as near equivalents. For, according to Shackle, an investor has no alternative but to choose that asset, or not more than two assets, which will place him at the preferred position on the gambler indifference map. But, according to Roy, if he does not like this position, he has the alternative of holding more than two assets and so reaching a position of greater safety—except when there is unit price correlation. And, according to Roy, it is only when there is unit price correlation that the diagrams drawn here will represent his expectations about the outcome of a composite holding of assets—even if the composite holding comprises only two assets.

GROWTH OF EMPLOYMENT AND DIVERSIFICATION OF INDUSTRY IN THE DEVELOPMENT AREAS

By PETER ROBSON

IT is now ten years since the passing of the Distribution of Industry Act of 1945 marked the beginning of a national policy towards the location of industry. Since that time many important changes have occurred in the economic position of the Development Areas. At the same time the operation of the policy has undergone considerable modification over these years, partly as a result of decisions on location policy but partly as a result of changes in general economic policy.

A question which is likely to be asked increasingly in the future is how far and in what directions these changes should be encouraged to continue. This is bound up with the problem of what should be the long-term objective of development policy. With these matters in mind this article discusses first the operation of location policy in the recent past. It then goes on to analyse some of the more important changes which have taken place in the Development Areas since 1939, on the basis of unpublished information kindly supplied by the Board of Trade and the Ministry of Labour and National Service.

The Background

It is convenient to begin by outlining briefly the background of the policy. Distribution of Industry policy took shape against the background of certain aspects of pre-war industrial development. Before the war a marked feature of the industrial scene was the heavy concentration of unemployment in certain areas in the north and west of Britain, where the coal-mining, shipbuilding, and iron and steel industries were highly localized. These industries were at that time suffering from a prolonged and severe depression, partly on account of their dependence upon export markets which were undergoing a long-term decline, and partly because of the simultaneous occurrence of a downward phase in the trade cycle. Meanwhile, developing industries like motor vehicles and aircraft were growing up in the more prosperous areas in the south and the Midlands. A great deal of migration took place from the depressed areas to the south, but heavy localized unemployment continued. Rates of unemployment in these areas were seldom less than twice the average for the rest of the country. These high rates of localized unemployment, the drift to the south, and the development of the conurbations of London and the Mid-

lands all gave rise to much concern, and out of the investigations[1] which this generated the postwar Distribution of Industry policy emerged.

This policy as outlined in the 1945 Act represented in the main an attempt to restore the balance between the newer industrial areas with apparently more secure industrial prospects, and some of the older areas. The Board of Trade was empowered to schedule areas as Development Areas if it was satisfied that 'there is or is likely to be a special danger of unemployment in that area'.[2] Scheduling carried with it a number of financial advantages, of which the provision of government-built factories at subsidized rentals was one of the most important.

The Act, however, also recognized the responsibility of the Board of Trade for securing a 'proper' distribution of industry in the country as a whole. The permanent basis of the Board's powers in this respect rests on its ability to refuse in the last resort the industrial development certificate which is required under the Town and Country Planning Act of 1947 before any new industrial development is permitted. The emphasis of the policy, however, has been upon inducement and facilities, not on prohibition. These inducements have been been supported by various means of encouragement and persuasion.

The Administration of the Policy

Four Development Areas were scheduled under the Act in 1945. These were the Scottish, the North-eastern, the West Cumberland, and the South Wales and Monmouthshire areas. In February 1946 Wrexham and South Lancashire were added. In 1949 Merseyside and the Highlands of Scotland were also scheduled. Finally, in October 1952 North-east Lancashire was included. At the present time approximately one-fifth of the insured population of Great Britain live in the scheduled areas.[3]

Originally the main aim of the policy was to introduce any new industry into the areas which would make them less dependent upon a narrow range of capital goods industries producing largely for export and liable to violent fluctuations. This aim was supported at first by refusing building licences and permits for scarce materials for firms wishing to expand elsewhere. Between 1945 and 1948, however, little restriction was placed

[1] The Report of the Royal Commission on the Distribution of the Industrial Population, Cmd. 6153, January 1940 (the Barlow Report), was the most important of these.

[2] See Distribution of Industry, Cmd. 7540, 1948, p. 26.

[3] In Northern Ireland the rate of unemployment is much higher than in any of the Development Areas and its industry rests on a very narrow base. It is not technically a Development Area, however, since the 1945 Act is confined to Great Britain. Under local legislation, however, the Northern Ireland Government offers extensive facilities for industrial development. In addition the Imperial Government treats the area as far as possible in the same way as a Development Area as far as the steering of industry and the placing of contracts is concerned.

on firms of any types which were prepared to expand in the areas. Economic circumstances then made it necessary to reduce capital expenditure in the economy as a whole and to concentrate production on goods for export. In consequence a rigid rule was enforced whereby only firms making a substantial contribution to national recovery were allowed to expand at all. This rule had some repercussions on the Development Areas, for firms satisfying this requirement were often in a strong position to resist suggestions that they should go to these areas. These dollar-earning restrictions were modified in July 1950 for industries employing males. More recently the disappearance of material licences and building controls has removed the ability of the government to apply these inducements to steer new industrial development to the areas.

The 1945 Act did not in practice divide the country into two sharply divided parts, in one of which development was fostered and the other in which it was as far as possible suppressed. The policy has been operated with a good deal of flexibility, and in its steering of industry the Board of Trade has taken account of pockets of unemployment wherever situated. This aspect was stressed in the 1948 White Paper[1] and is still important.

Since 1948, when the capital restrictions were first imposed, the percentage of factory floor space approved in the Development Areas has averaged about 20 per cent. of the total approved in Great Britain. This is a proportionate share in terms of the size of the population of the areas but compares with a share of 40–60 per cent. in the period before 1948. The reduced share going to the Development Areas may be taken as an indication of the growing regard now had to the claims of the rest of the country, although there is little doubt that it also reflects the reduced influence of the Board of Trade as a result of the gradual freeing of the economy.

The changes in employment and in the structure of industry in the Development Areas which are discussed below are, of course, by no means wholly or even mainly due to location policy. New enterprises attracted to these areas have had and will continue to exercise an important influence on the level of employment and the character of production, but a most important influence accounting for the changes is the general revival in the fortunes of the basic industries of the areas which has occurred since the war.

Moreover, although the influx of new firms rests in part on the application of the policy, both through its positive inducements and its negative prohibition, this is not the only cause. The acute shortage of houses, factories, and, more recently, labour have also played an important part in disposing firms to open branches, move to, or set up in the areas.

[1] See Distribution of Industry, pp. 24–25.

Changes in Employment and Unemployment in the Development Areas

The over-all changes which have been taking place in the Development Areas recently may be illustrated by the trends in employment and unemployment in the areas since 1939. In 1939 the areas were already more prosperous than at any time during the preceding decade, mainly on account of rearmament. There were at that time 150,000 more persons in employment than in 1937. Even so, unemployment in the middle of the year amounted to 13 per cent. of the insured population, compared with 7 per cent. in the country as a whole.

During the war unemployment declined to negligible proportions and employment rose to high levels, but postwar reconversion and demobilization was accompanied by a substantial increase in unemployment, which reached a postwar peak of 171,900, or 7 per cent., in 1946. From 1946, as reconversion continued and new industries were established in the areas, the number unemployed fell fairly steadily to 101,400 in September 1947. Thereafter it continued to decline from 105,700 (new basis) in mid-1948 to 64,900 in mid-1951. Under the influence of the textile recession it subsequently increased to 90,900 in December 1952. Since that date it has continued to decline with only minor interruptions to the mid-1954 level of 68,700, which is slightly higher than the lowest postwar level attained in 1951. The 1954 rate represents a rate of 2·2 per cent. of the insured population, which compares with a rate of 1·2 per cent. for the United Kingdom as a whole.

Turning now to employment, it appears that there were already about 200,000 more persons working in the areas by mid-1945 compared with 1939. From that date employment has risen fairly steadily to a peak of 3,060,000 in 1954. During the whole period, making allowance for the change in the scope of the statistics in 1948, it appears that employment in the areas has risen by some 535,000. As indicated in Table I this is an increase of some 21 per cent., which compares with an average for the United Kingdom as a whole of about 13 per cent. About 350,000 of the increase is attributable to the period after 1945.

These figures indicate the extent to which the short-term problem of taking the work to the workers has been largely solved. The extent and nature of the remaining problem differs from area to area.

At the end of 1954 unemployment in North-east Lancashire was negligible. In Wrexham, West Cumberland, and South Lancashire also, rates of unemployment were hardly in excess of the national average. In Wrexham and West Cumberland the absolute amount of unemployment is small and the introduction of one factory of medium size would be sufficient

to absorb nearly all of the existing unemployed. In South Lancashire the absolute amount of unemployment is greater, but in few industrial orders does it exceed 100 either for males or for females.

TABLE I

The Development Areas and the United Kingdom: Percentage Change in Employment 1939/1954

Area	*Male*	*Female*	*Total*
Scottish	+12·4	+25·8	+16·8
North-eastern	+14·8	+59·7	+24·5
W. Cumberland	+31·3	+124·0	+47·5
S. Wales	+8·3	+95·3	+22·6
Wrexham	+19·3	+151·3	+36·6
S. Lancs.	+10·6	+34·3	+17·3
Merseyside	..	..	..
North-east Lancs.	..	..	..
All Development Areas	+22·5	+47·0	+21·2
United Kingdom	+8·7	+20·7	+12·6

In the four largest areas, namely the Scottish, North-eastern, South Wales, and Merseyside, rates of unemployment are still in excess of the national average although below the Beveridge target. The absolute amount of unemployment is naturally substantial. Much of this is concentrated in a small number of trades. In manufacturing industry it is particularly important in engineering, textiles, clothing, and food. In the non-manufacturing trades it is particularly important in building, transport, distributive trades, and public administration. In this group of trades much of the labour is likely to be unskilled.

Employment for Women in the Development Areas

A most important problem in the Development Areas before the war was the lack of employment opportunities for women. This showed itself not so much in a higher rate of unemployment for women as in a much lower ratio of insured women to men in the areas as compared with the country as a whole. In 1937, for example, there were 37 insured women to every 100 men in the country as a whole as compared with only 25 in the areas.[1] One of the objectives of location policy has been to overcome this deficiency and to tap some of these reserves of labour. This has been done with marked success. Since the war there has, of course, been a marked expansion in the size of the female insured population in the country as a whole. At present about 1¼ million more women are in employment than

[1] See Distribution of Industry, p. 7.

in 1939, which is a much larger proportionate increase than that for men. It is reflected in the ratio of insured women to men, which by 1954 had risen from 47 to 53 per cent.

In the Development Areas the increase has been much more marked, and indeed the greater relative expansion in employment which has taken place in these areas rests largely on the increase in the female working population. Since 1939 employment for women in the Development Areas appears to have increased by about 295,000[1] and the ratio of insured women to men in those areas now stands at 47, compared with 31 in 1939. In three areas—the Scottish, North-east Lancashire, and Merseyside—the ratio is now in excess of the national average, whereas before the war it was above in none.[2] If the national average could be attained in all areas in which it now falls short an increase in the working population of about 165,000 might be achieved. However, this is unlikely to occur in the North-east, South Wales, and Wrexham because of the emphasis there on shift-working and heavy industry. Nevertheless there are probably good opportunities for increasing the female labour force in these areas to some degree if suitable employment could be provided.

Changes in the Employment Structure of the Development Areas

One of the main objectives of location policy has been to diversify the industrial composition of the areas. This has been interpreted partly as requiring the introduction of industries which would support a balanced demand for labour in the sense of providing appropriate opportunities for both male and female employment, but mainly as requiring a reduction of the dependence of the areas on a narrow range of capital goods. How far these objectives are sufficient to meet the problems of the areas is not discussed in this section, which is mainly concerned to show in what ways and to what extent the industrial structure of the areas has been modified, particularly with reference to the second objective of diversification.

For a preliminary examination of this problem it is convenient to make use of a simple statistical measure of specialization—which is the opposite of diversification. This is arrived at by comparing the percentage of insured workers in an industry in any area with the corresponding percentage for the industry in the country as a whole. For any industry the difference between these percentages will indicate the extent of an area's specialization upon that industry or the degree to which it is underrepresented as compared with the country as a whole. The sum of the positive differences (which, of course, equals the sum of the negative differences also) then provides a

[1] See also J. H. Dunning, 'Employment for Women in the Development Areas', Manchester School of Economic and Social Studies, September 1953. This article relates mainly to a discussion of changes in the insured population rather than to changes in employment.

[2] See C. E. V. Leser, *Some Aspects of the Industrial Structure of Scotland*, 1951, p. 11.

convenient indicator of the specialization or lack of diversification of the area. This sum, which may be called the coefficient of specialization, will lie between 0 and 100. The first limit implies that the area has the same industrial structure as the rest of the country; the latter means that it has no industry in common with the rest of the country. This approach will be used to examine the changes in the Development Areas.

It is useful to regard these changes as the result of two separate factors. In the first place, the industrial structure of the United Kingdom has changed over the period which must be expected to affect the areas. In the second place, there has been some redistribution of industry as a result of the operation of location policy and other factors. In practice it is not possible to separate these components, but the concept of the fair share can be employed as a basis of distinction.

An area's fair share in the expansion of an industry or group of industries may be interpreted in at least two different ways. It may mean that the area has received a share of the total national expansion (or contraction) of the industry which is proportional either to (*a*) the number of insured persons attached to the particular industries in each area, or to (*b*) the total number of insured persons in each area. For an area to have a fair share in the first sense simply means that the percentage rate of increase in the particular industry has been the same in the area as in the country as a whole. On the other hand, an area may have had more than its fair share in the second sense even if the percentage rate of increase in the particular industry has been no higher, or even lower, than in the whole country simply because a relatively high proportion of the insured workers in the area was attached to the industry in question in the base year.

The fair share of an industry in the first sense may be regarded as due to over-all changes. The rest may be defined as due to redistribution. There is some evidence from the past[1] that in the absence of government intervention rates of expansion of industries in different regions were not so dissimilar as to make this distinction without interest.

Table II sets out the percentage distribution of the insured population in the United Kingdom and the Development Areas as a whole for the years 1939 and 1954. For reasons of space it is not possible to show the position in the separate areas, although some aspects of the changes in the individual areas are mentioned below. Table III shows for the United Kingdom and the Development Areas the percentage changes in the numbers of insured workers in the different industries which have taken place since 1939. For the purpose of these comparisons the industrial order engineering, shipbuilding, and electrical engineering has been

[1] See Note of Reservation by J. H. Jones and others in the Barlow Report, p. 212; also Appendix II: A Memorandum on the Location of Industry, by J. H. Jones.

TABLE II

Industrial Distribution of Insured Workers in the Development Areas and the United Kingdom

TABLE II

Industrial Distribution of Insured Workers in the Development Areas and the United Kingdom

	1939					1954				
	U.K.		Development Areas			U.K.		Development Areas		
	Numbers (000s)	%	Numbers (000s)	%	Deviations	Numbers (000s)	%	Numbers (000s)	%	Deviations
Agriculture	773	4·9	45	1·9	−3·0	753	3·5	42	1·4	−2·1
Mining and Quarrying	974	6·2	438	18·1	+11·9	875	4·0	357	11·4	+7·4
Non-Metalliferous Mining Products	289	1·8	48	2·0	+0·2	345	1·6	62	2·0	+0·4
Chemicals and Allied Trades	284	1·8	49	2·0	+0·2	505	2·3	94	3·0	+0·7
Metal Manufacture	431	2·7	148	6·1	+3·4	556	2·6	176	5·7	+3·1
Engineering, Shipbuilding, and Electrical Goods*	1,319	8·3	272	11·2	+2·9	2,014	9·3	366	11·7	+2·4
Vehicles	553	3·5	30	1·2	−2·3	1,165	5·4	103	3·3	−2·1
Other Metal Goods	450	2·8	35	1·4	−1·4	496	2·3	54	1·7	−0·6
Precision Instruments	99	0·6	5	0·2	−0·4	141	0·7	13	0·4	−0·3
Textiles	1,181	7·4	103	4·3	−3·1	1,068	4·9	114	3·6	−1·3
Leather	79	0·5	5	0·2	−0·3	74	0·3	9	0·3	..
Clothing	703	4·4	49	2·0	−2·4	688	3·2	80	2·6	−0·6
Food, Drink, and Tobacco	642	4·0	81	3·3	−0·7	890	4·1	117	3·7	−0·4
Manufactures of Wood and Cork	267	1·7	29	1·2	−0·5	304	1·4	36	1·2	−0·2
Paper and Printing	483	3·0	42	1·8	−1·2	539	2·5	46	1·5	−1·0
Other Manufacturing Industries	332	2·1	25	1·0	−1·1	277	1·3	25	0·8	−0·5
Building and Contracting	1,479	9·3	242	10·0	+0·7	1,391	6·4	200	6·4	..
Gas, Electricity, and Water	226	1·4	30	1·2	−0·2	382	1·8	52	1·7	−0·1
Transport and Communication	906	5·7	157	6·5	+0·8	1,720	8·0	280	9·0	+1·0
Distributive Trades	2,318	14·6	353	14·6	..	2,341	10·8	332	10·6	−0·2
Insurance, Banking, and Finance	281	1·8	12	0·5	−1·3	466	2·2	31	1·0	−1·2
Public Administration and Defence	699	4·4	96	4·0	−0·4	1,375	6·4	160	5·1	−1·3
Professional Services	235	1·5	30	1·2	−0·3	1,619	7·5	207	6·6	−0·9
Miscellaneous Services	895	5·6	96	4·0	−1·6	1,669	7·7	171	5·5	−2·2
Ex-Service Personnel	..	..	..	..	..	8	0·0	2	0·1	..
GRAND TOTAL	15,898	100·0	2,421	100·0	±20·1	21,660	100·0	3,123	100·0	±15·0
*Shipbuilding	241	1·5	119	4·9	+3·4	317	1·5	129	4·1	+2·6
Engineering	748	4·7	137	5·7	+1·0	1,061	4·9	175	5·6	+0·7
Electrical Goods	330	2·1	16	0·7	−1·4	635	2·9	61	2·0	−0·9

split into its three main components. To the extent that the percentage increase for the areas differs from that for the United Kingdom there has been, in our terms, a redistribution of industry.

TABLE III

The Development Areas and the United Kingdom: Percentage Changes in Numbers Insured in Industrial Orders, 1939–1954

Industry	*U.K.*	*Scottish*	*North-eastern*	*W. Cumberland*	*S. Wales*	*Wrexham*	*S. Lancs.*	*Total, 6 D.A.'s*
Agriculture	−13·5	−20·5	−18·3	−37·8	−17·0	−14·7	−30·0	−20·7
Mining and Quarrying	−15·9	−37·5	−12·6	−28·9	−31·1	−19·7	−28·7	−24·1
Non-Metalliferous Mining	+7·2	+24·5	+17·7	−16·6	+47·0	−30·4	+27·9	+26·3
Chemicals and Allied Trades	+43·5	+30·2	+46·6	+517·9	+298·3	+261·8	+8·7	+66·2
Metal Manufacture	+10·3	+3·5	+24·7	+32·6	−2·5	+113·4	+71·3	+7·9
Engineering, Shipbuilding, and Electrical Goods*	+38·6	+14·9	+20·1	+667·3	+122·0	+351·6	−3·1	+23·3
Vehicles	+78·2	+229·2	+158·6	+89·9	+277·5	+61·6	+163·9	+211·4
Other Metal Goods	−7·0	+22·3	+7·7	+65·2	+118·4	+82·0	+66·5	+42·9
Precision Instruments	+17·4	+44·0	+25·7	+156·7	+1672·8	..	..	+114·4
Textiles	−21·3	−16·1	+124·1	+585·5	+882·4	..	−11·8	−0·7
Leather	−19·4	+5·6	+51·3	+147·1	+257·6	+259·9	+420·1	+46·0
Clothing	−17·0	+8·1	+108·8	+314·7	+179·9	+146·2	−2·0	+51·6
Food, Drink, and Tobacco	+13·3	+20·3	+32·7	+99·1	+42·6	+35·5	+67·0	+29·8
Manufactures of Wood and Cork	−3·9	−1·7	+11·3	+239·2	+33·5	+23·1	−2·4	+8·3
Paper and Printing	−7·0	−10·3	−0·1	+51·9	+21·6	−75·5	+10·5	−3·2
Other Manufacturing Industries	−29·1	−49·9	−9·2	+327·5	+98·9	..	+73·6	−5·0
Building and Contracting	−13·3	−7·0	−18·5	−30·0	−40·9	+6·2	−34·1	−21·2
Gas, Electricity, and Water	+29·3	+12·1	+39·3	−13·7	+65·0	+179·8	+39·0	+38·1
Transport and Communication	+32·1	+33·5	+48·9	+41·8	+22·6	+44·8	+56·6	+35·7
Distributive Trades	−12·8	−15·5	−12·5	−4·5	−17·5	+9·9	−14·6	−14·6
Insurance, Banking, and Finance	−3·8	−17·5	+1·1	−33·0	−27·3	−40·4	−27·4	−16·3
Public Administration and Defence	+32·5	−3·4	+20·1	+48·8	+31·8	−8·0	−26·4	+10·9
Professional Services	+55·8	+154·3	+150·3	+58·3	+152·1	+264·6	+123·6	+151·3
Miscellaneous Services	+8·9	+12·7	+15·7	−23·8	+27·4	+48·1	+19·3	+16·2
Ex-Service Personnel	..	..	..	..	..	..	..	..
GRAND TOTAL	+9·6	+5·5	+10·0	+20·6	+6·1	+21·0	−0·4	+10·4
* Shipbuilding	+21·0	−10·1	+5·2	..	+45·0	..	..	−1·4
Engineering	+39·6	+22·4	+4·5	+628·4	+70·4	+31·8	−5·2	+18·8
Electrical Engineering	+52·1	+279·2	+179·4	+2365·0	+563·1	..	+32·7	+252·1

A comparison of these two tables indicates clearly how the industrial structure of the areas as a whole has been changing since 1939 in comparison with that of the United Kingdom.

In 1939 the following industrial groups were underrepresented in the areas: vehicles; other metal goods; precision instruments; textiles; leather; clothing; food, drink, and tobacco; manufactures of wood and cork; paper and printing; other manufacturing industries; electrical engineering. Since 1939 the Development Areas as a whole have received more than their fair share of these industries in some degree. Of those industrial groups which were overrepresented in the areas in 1939 the areas have since received less than their fair share of metal manufacture; shipbuilding; engineering, and mining and quarrying, but more than their fair share of

chemicals and non-metalliferous mining products. In the case of chemicals there has been an increased specialization in the North-eastern Development Area and in Wrexham. South Wales has eliminated its deficiency. In West Cumberland a new chemical industry has been created on which there is now a substantial degree of specialization. In the other regions there has been no marked relative change. In non-metalliferous mining products the changes in the individual areas were generally in the direction required for a reduction of specialization except in South Lancashire and Wrexham.

The importance of the contribution made by the various industries to the diversification of the areas has differed greatly. Two industries which were greatly underrepresented in the areas as a whole in 1939 were textiles and clothing. Since 1939 there has been a very considerable expansion of these industries in the various areas, with the notable exception of Scotland. As a result the negative deviation in respect of these industries in the areas has now been greatly reduced, though the relative decline of these groups in the country as a whole is an important contributory factor.

Other industries which were markedly deficient in the areas in 1939 were vehicles and electrical engineering. In these industries there has occurred a very considerable expansion of employment. In the vehicles group it has tripled since 1939 and in the electrical engineering group it has quadrupled.[1] The relative position of the areas in relation to these groups, however, is not so encouraging. In vehicles the negative deviation has hardly been reduced at all since 1939. In electrical engineering there has been a considerable reduction, although a marked deficiency remains. These industries have both been growing rapidly outside the areas.

In precision instruments the areas as a whole were not markedly deficient in 1939. Since then employment has increased substantially and the negative deviation has been reduced. In absolute terms, however, the amount of employment provided by this group is small.

Employment arising from New Industrial Development in the Areas since 1939

The changes in employment outlined above have arisen partly as a result of new industrial development in the areas by existing or outside firms and partly as a result of changes in employment by firms operating in existing premises. It is of some interest to examine the character of employment arising from new industrial development only, for it is mainly this which is influenced by distribution of industry policy. Such an examination can be made on the basis of information contained in the industrial development certificates which must be obtained from the Board of Trade in

[1] Comparison with 1939 on unadjusted basis.

connexion with all new building in excess of 5,000 square feet. It should be borne in mind that this new development does not correspond to outside development. Some of it will have been undertaken by firms already in the areas. Moreover, new development does not always result in additional employment, for some of it will have been undertaken to replace existing buildings.[1]

Table IV contains estimates of the direct employment expected to arise from all new industrial building approved in Great Britain and the Development Areas since 1945. Over the whole period employment arising from new development in Great Britain is expected to amount to about 825,000. The corresponding figure for the areas as a whole is 309,000.

Columns I and K contain two indexes of relative development in the areas. The index in column I expresses the employment expected to be created in the areas as a whole in terms of their fair share in the first sense distinguished above. For this purpose it has been computed on the basis of the size of the insured populations in the various industrial groups in 1954. The total of column I indicates that on the basis of the relative size of the insured populations in the areas attached to these manufacturing industries the areas are expected to receive more than double their fair share of employment arising from new development. This is a measure of the redistribution of industry towards the areas. It can be seen that in the case of the first five industrial groups and of wood and cork the estimated employment arising from new development in the areas will be less than the average increase. In non-metalliferous mining products, chemicals, metal manufacture, and shipbuilding and marine engineering, on which the areas as a whole are concentrated, the increase is markedly less than the average. In the case of all other industries the estimated employment arising from new development is more than the average. The emphasis is most marked in the case of electrical goods, precision instruments, and clothing, but it is appreciable in the case of leather and textiles.

Column K relates to the concept of a fair share and the redistribution of industry in the second sense. The total of column K representing the areas' relative share of estimated employment in *all* industry is of course the same as that of column I. The differences between the two indexes for *individual* industries takes account of the relative size of the different industries in the Development Areas in comparison with the country as a whole. In cases in which the areas are specialized upon a particular industry in the sense that it is overrepresented in the areas, the individual index computed in this way will show an increase as compared with that in column I. In cases where the industries are under-represented the index in column K will be the smaller of the two.

[1] See Statistical Note.

TABLE IV

Expected Employment arising from New Industrial Development approved in the Development Areas and Great Britain, 1945–54

	Great Britain				*Development Areas*						
	Number of insured workers (000s)	*% of total*	*Employment provided by new building (000s)*	*C as % of A*	*Number of insured workers (000s)*	*% of total*	*Employment provided by new building (000s)*	*G as % of E*	*First Development index H ÷ D*	*'Expected'* employment in Development Areas*	*Second Development index G ÷ J*
	A	B	C	D	E	F	G	H	I	J	K
Non-Metalliferous Mining Products	340·7	3·9	35·0	10·3	65·2	4·1	9·3	14·3	138·8	6·3	147·6
Chemicals and Allied Trades	503·4	5·7	67·3	13·4	123·5	7·8	26·8	21·7	161·9	12·1	221·5
Metal Manufacture	555·5	6·3	46·2	8·3	179·9	11·3	19·0	10·6	127·7	8·3	228·9
Shipbuilding and Marine Engineering	292·6	3·3	7·1	2·4	157·5	9·9	3·8	2·4	100·0	1·3	292·3
Mechanical Engineering	1,048·5	11·9	126·4	12·1	189·3	11·9	43·8	23·1	190·9	22·7	193·0
Electrical Engineering	632·5	7·2	82·0	13·0	84·3	5·3	38·6	45·8	352·3	14·7	262·6
Vehicles	1,146·5	13·0	87·4	7·6	122·7	7·7	22·2	18·1	238·2	15·7	141·4
Metal Goods not elsewhere specified	493·6	5·6	45·8	9·3	65·6	4·1	13·9	21·2	228·0	8·2	169·5
Precision Instruments	139·2	1·6	17·6	12·6	14·4	0·9	7·2	50·0	396·8	3·2	225·0
Textiles	995·8	11·3	82·8	8·3	165·9	10·4	34·3	20·7	249·4	14·9	230·2
Leather	73·3	0·8	5·6	7·6	11·8	0·7	2·4	20·3	267·1	1·0	240·0
Clothing	652·0	7·4	61·4	9·4	93·0	5·9	30·0	32·3	343·6	11·0	272·7
Food, Drink, and Tobacco	864·8	9·8	63·4	7·3	170·0	10·7	26·6	15·6	213·7	11·4	233·3
Manufactures of Wood and Cork	298·7	3·4	27·2	9·1	44·4	2·8	8·3	18·7	205·5	4·9	169·4
Paper and Printing	533·2	6·0	31·8	6·0	57·9	3·6	9·0	15·5	258·3	5·7	157·9
Other Manufacturing Industries	275·2	3·1	37·9	13·8	43·7	2·7	13·9	31·8	230·4	6·8	204·4
TOTAL MANUFACTURING INDUSTRY	8,845·5	100·0	824·9	9·3	1,589·1	100·0	309·1	19·5	209·0	148·2	209·0

* 'Expected' employment is the amount which would be achieved if the areas received a share of the estimated total new employment in each group which is called for on the basis of the relative size of their insured populations in manufacturing industry.

Source: Figures of estimated employment supplied by the Board of Trade on the basis of approvals of new factory buildings and extensions to existing buildings in excess of 5,000 square feet granted during the period 1945 to the end of 1954.

Thus K exceeds I for only the first five industries and food, which are relatively important in the areas. The K index is still relatively high in the case of electrical engineering and clothing, which reflects the very substantial progress made in attracting these industries to the areas. The reduction of the K index for precision instruments is notable.

On the whole the results shown by this second approach are in broad conformity with those shown by the first. It should be stressed that these figures relate to estimated employment only and probably err on the optimistic side, though not necessarily more for the areas than for the country as a whole. The Board of Trade is understood to believe that about 80 per cent. of the estimated employment eventually materializes in the Development Areas.

TABLE V

The Development Areas : Indexes of Specialization (uncorrected)

Area	*1939**	*1945**	*1948†*	*1948*	*1953*	*1954*
Scottish . .	13·5	14·6	12·7	12·5	11·7	12·3
North-eastern .	27·4	27·0	24·4	22·8	22·1	22·1
W. Cumberland .	37·7	29·2	28·3	28·5	30·9	31·1
S. Wales . .	38·6	33·3	27·7	25·8	24·4	24·6
Wrexham . .	41·3	47·7	36·7	34·9	37·5	36·9
S. Lancashire .	35·9	35·8	34·4	31·7	31·1	32·4
Merseyside .	..	..	27·0	23·2	22·1	23·1
NE. Lancashire .	..	..	..	..	41·3	42·0

* Old insured populations adjusted to new industrial classification.
† Old insured populations on standard industrial classification.

Indexes of Specialization for the Development Areas

The effects of the foregoing changes are summed up in the changes which have taken place in the coefficients of specialization for the areas over the period. These are shown in Table V for each of the areas. It can be seen that each is now less specialized in relation to the industrial distribution of their insured populations than it was in 1939. A comparatively small reduction has taken place in the Scottish area. This was already fairly well diversified in 1939. The most marked reductions have occurred in West Cumberland and South Wales, both of which were fairly highly specialized in 1939. South Lancashire and Wrexham were also both fairly highly specialized in 1939. There has since been some reduction, but they were in 1954 the most highly specialized of the areas with the exception of North-east Lancashire. A fairly substantial reduction of specialization has also occurred in the North-eastern area.

It is not to be expected, of course, that the smaller areas will ever approach the degree of diversity found, for example, in the Scottish area, where the Development Area constitutes virtually a well-developed economic region.

The Issues of Location Policy

The problem of location policy is the threefold one of deciding for what purposes, in favour of what areas, and by what means the government should bring pressure upon industry to locate itself in areas different from those which it would choose voluntarily. This article has discussed how this policy has operated so far and the changes which have come about in the areas. These changes provide the background against which any consideration of the future of location policy will have to be undertaken. In this connexion a number of questions pose themselves.

In the first place, taking for granted the general objective of preserving the industrial balance, how far are changes required in the administration of the Act? This is mainly a question of the desirability of descheduling existing areas and adding new ones. There has been only one general review of this matter, which took place in 1948 under section 7 of the Act. It was considered to be too soon at that time to deschedule any area, but Merseyside and the Highlands of Scotland were added.

Most of the areas now have unemployment rates which are very low, and on this criterion alone they would not appear to have much claim for the special facilities which scheduling involves. But unemployment has never been the sole criterion for scheduling. The 1948 White Paper outlined[1] the considerations which the Board of Trade takes into account in assessing the claims of an area. There is room for argument as to how far the existing areas meet these requirements at the present time, but for most a case for their retention could easily be made out. In some areas it seems highly likely that on the basis of existing industrial trends substantially higher unemployment may be inevitable in the medium term in the absence of a continued inflow of new industry or migration of labour. This is the case, for example, in parts of West Durham, South Lancashire, and the South Wales areas.

If on this account it were considered desirable to expand the inflow of new industry, this could probably be done to some degree. More stringent opposition might be raised to applications for permission to establish factories outside the areas, for one thing. In the second place, less exacting requirements could be imposed for those seeking government-built factories. Not all firms which are prepared to go to the areas can obtain a

[1] Op. cit., p. 15.

government factory. Firms seeking one have to be of a suitable kind and may have to undertake to follow a labour policy approved by the authorities. In the recent past, for example, there has been an official emphasis on providing male employment in the areas, and many firms have had to accept the obligation to employ a certain proportion of males as a condition of getting a government factory. The grant of a government factory appears still to be highly valued despite the recent upward revision of rents,[1] and a relaxation of this obligation and a more generous attitude to applicants would undoubtedly have an effect. Such a change would imply increased subsidization of the areas, however, which from a wider viewpoint may not be desirable.

Insistence on a proportion of male employment does not appear to be altogether desirable on economic grounds in any case as it imposes what may prove to be a costly restraint on the flexibility of production methods. Some firms have been placed in serious difficulties by the acceptance of this requirement.

As far as the scheduling of additional areas is concerned it is true that unemployment rates in certain areas outside the scheduled areas are much higher than within the areas themselves. At the same time the actual amounts involved are small, and on the basis of the considerations set out in the 1948 White Paper the claims of these areas could hardly be supported. The Board of Trade already takes account of these pools of unemployment in its steering of industry, but in these cases it has no power to give any financial assistance. It might be desirable, however, as the Committee on Local Development in Scotland recommended,[2] that the government should take power to give financial assistance wherever necessary, and not only in the Development Areas. This would not necessarily eliminate the differential advantages of the areas, as is sometimes argued, for there would be scope for the application of varying standards of eligibility and rates of assistance according to the area in question.

Even if the objective of preserving the existing industrial balance is accepted, however, it can be argued that it is time for a greater emphasis to be placed on the mobility of labour and retraining as a means of improving the employment position in the areas. Within the areas unemployment rates vary significantly from one exchange area to another, and pockets of unemployment coexist with labour shortages, often in the same trade.

A number of instances of this may be found in the latest report on

[1] Between 1945 and mid-1951 rents for the first 5 years were based on 1939 rental values. Since 1951 new rents have been based on current market values, with diminishing rebates, starting at 50 per cent. for 5 years. This appears to imply a reduction of subsidization.

[2] See *Local Development in Scotland*, The Scottish Council (Development and Industry), 1952, p. 34.

employment of the North-east Industrial and Development Association.[1] About 86 per cent. of the population of the region covered by this association live in the North-eastern Development Area. The report points out, for example, that in 1954 there were sufficient vacancies in the chemical and allied trades on Tees-side to absorb almost all of the male unemployed workers attached to these trades in Wearside, the Hartlepools, and Tyneside, as well as all those on Tees-side.

The small number of unemployed who are attached to most trades in particular areas also suggests the need for promoting occupational mobility.

At the present time, however, after ten years of Distribution of Industry policy, it is probably desirable to consider afresh how far the old arguments still hold for preserving the industrial balance and bringing work to the workers. In so far as location policy can be regarded as anything more than a short-term expedient for securing maximum output at a time when the mobility of labour was necessarily low, it rests to a large extent on the conclusions of the Barlow Commission. Among other things this body reported in favour of checking the growth of industry in the south and of preventing the spread of the large industrial conurbations. These recommendations were made after a consideration of social and strategic as well as economic factors. Whilst the possible private economic advantages to industry of existing trends were recognized, the Commission concluded that social costs tipped the balance in favour of regulation. This did not necessarily point to fostering development in what are now the Development Areas, but taken with the widely accepted view that over a wide range of locations private costs would not differ materially, and the later arguments in favour of preserving the countryside, the claims of the older centres of industry appeared to be strong.

How far these arguments are relevant at the present time is not clear. Some attempt has been made to provide a better economic basis for judgement by examining in detail the behaviour of private costs under alternative locations on the basis of the experience of firms which have been induced to go to the Development Areas since the war. The results have not been conclusive. It can at least be said, however, that on the basis of these studies the firms in question are not apparently suffering any serious and continuing cost disadvantages.[2] But what one would like to know, however, is the *extent* of the disadvantage anticipated by those firms, including a number in the motor industry, which have resisted attempts to steer them to the areas since the war. This knowledge would

[1] See *The Northern Region*, December 1954, p. 22.

[2] See, for example, Hague and Newman, *Costs in Alternative Locations*, and Luttrell, *The Cost of Industrial Movement*. Cambridge, for N.I.E.S.R.

be particularly relevant to any question of strengthening the operation of location policy.

From the economic viewpoint, of course, it is total costs, including social costs, which are relevant. In this connexion it was the contention of the Barlow Commission that when direct social costs were taken into account the most preferred private location was not necessarily the most advantageous from the point of view of the community. The original arguments on this point were probably overstated, but the great additions which have been made to the social capital of the areas in the last few years would probably require a good deal of weight to be given to this argument at the present time.

Unemployment, however, can hardly be the only criterion for deciding on the claim of an area to development. For one thing, concealed unemployment may be important. This may be higher in non-scheduled areas, particularly agricultural areas. For another, unemployment may be low only because the population is declining on account of migration. This should not necessarily be taken to imply that development would not be advantageous. Finally, unemployment may be high simply because the population is increasing faster than employment opportunities. Here the desirability of growth should surely be assessed against the alternative of migration.

Ideally a development policy should be concerned with promoting industrial growth in those areas with economic advantages. Many of the Development Areas have important advantages from this point of view, although in some cases restrictive labour attitudes do much to nullify them.

Now that the short-term problem of unemployment in the areas has been largely overcome, attention must be given to the longer-term objectives. Until this is done the direction of policy will remain in doubt and it will not be clear whether emphasis should be placed on mobility of labour or the steering of industry.

Statistical Note

Precise comparisons for the whole of the period 1939 to 1954 cannot be made on the basis of statistics relating to the aggregate insured population or its industrial distribution for two reasons. In the first place, the coverage of the insurance scheme was changed in 1948 with the introduction of the National Health Service Act. In the second place, at the same time the system of industrial classification hitherto employed by the Ministry of Labour was replaced by the Standard Industrial Classification.[1]

For the purposes of this paper an attempt has been made to produce comparable figures for the whole period by means of the following adjustments. In relation to

[1] See *Guides to Official Sources: No. 1, Labour Statistics* (revised edition) for a full discussion of these changes.

the first point, figures have been made available showing the numbers of insured workers in each industry in the various Areas in 1948 who were covered by the old and the new insurance schemes. These figures are based on the Standard Industrial Classification. The differences between the two sets of figures have been used as a basis for grossing up the numbers of insured workers for the earlier years which relate to the restricted coverage of the old insurance scheme.

In regard to the second problem an attempt has been made to reclassify the figures showing the distribution of the insured population for the earlier years 1939 and 1948 so as to make them as nearly as possible comparable with those based on the Standard Industrial Classification employed since 1948. In most cases the differences and errors arising from the adjustments appear likely to be small. Most of the transfers and reclassifications made in 1948 appear to arise within the main industrial orders, and few of our comparisons rest on a subdivision of these orders.

The Ministry of Labour figures mentioned above provide the most complete picture of the changes in the employment structure in the areas since 1939, although for the reasons indicated the link between the pre- and post-1948 period cannot be regarded as exact.

An alternative approach to estimating the changes which have taken place in the areas since 1945 may be made on the basis of some partial information on employment provided by new industrial development in the areas which has been collected by the Board of Trade in the course of its administration of the Distribution of Industry Act 1945.

New industrial development in the areas since 1945 may be divided into three main classes:

(i) Arising from new industrial building, privately or government financed, for local or new firms.
(ii) Arising from the leasing and disposal of surplus war factories.
(iii) Arising from outside firms occupying existing vacant premises in the areas.

Figures relating to the estimated employment arising from (i) are collected by the Board of Trade under Section 9 of the 1945 Act. Employment arising in this way constitutes the greater part of that arising in these three ways. Some estimates of employment are available for the second class. These estimates taken together provide much useful information on the contribution of industrial change to the altered structure of employment in the areas. They cannot, however, provide such a comprehensive picture of the total changes in the areas as do the Ministry of Labour's figures, for two main reasons. In the first place, no account is taken of changes in employment which arise from a contraction or expansion of employment in existing premises. In the second place, the figures so obtained are estimates only which are provided by the firms when the development is contemplated. They necessarily are likely to err on the optimistic side. No figures are available of the actual employment resulting from this development at any date, though the Board of Trade believes that on average, in the Development Areas some 80 per cent. of estimated employment arising from these developments eventually materializes. Finally, of course, the figures mentioned above relate only to manufacturing industry. Notwithstanding these points, figures arising in this way provide an illuminating supplement to the labour statistics, and some use is made of them.

Except where otherwise indicated the term 'Development Areas' when used in relation to the statistical comparisons means the four original areas (but including, in the case of the Scottish Area, the Scottish Highlands) plus Wrexham and South Lancashire. Figures are not available for the whole of the period for Merseyside and North-east Lancashire, and these areas have therefore generally been omitted.

A NOTE ON INDEX-NUMBERS AND COMPENSATION CRITERIA

By M. H. DOBB

MR. CHARLES KENNEDY has given us very neatly (in *O.E.P.*, Feb. 1954) a rigorous proof that the index-number inequality $\sum P_2 Q_2 > \sum P_2 Q_1$ implies the Scitovszky criterion. It is sometimes supposed that by analogy $\sum P_1 Q_1 < \sum P_1 Q_2$ must imply the Kaldor criterion of gainers compensating losers.[1] That this is not the case, however, becomes clear as soon as it is realized that for a consistent individual $\sum p_1 q_1 < \sum p_1 q_2$ is *not* a sufficient condition for his being better off in the second situation. Accordingly, even if redistribution of the quantities in the second situation were to make this inequality hold for every individual (and hence for the group), this would not be sufficient to ensure that every individual was better off. (We might perhaps call this possibility of redistributing q_2's so as to give every individual more q_2's measured in first-situation-prices the 'pseudo-Kaldor criterion' because it can be so easily mistaken for the real one.)

However, an analogous proof to that of Mr. Kennedy can show that the Laspeyres inequality $\sum P_1 Q_2 < \sum P_1 Q_1$ implies the *negative* of the Kaldor criterion, i.e. the impossibility of gainers compensating losers. Since this can be regarded as the Scitovszky criterion applied in the reverse direction (i.e. considering the effect of a move from situation 2 to situation 1), there is no need to repeat the Kennedy-proof *mutatis mutandis*. We have only to write the inequality that is the subject of the Kennedy-proof in the more general form $\sum P_x Q_x > \sum P_x Q_y$ to see that the demonstration holds whether x stands for situation 1 or situation 2. In other words, $\sum P_x Q_x > \sum P_x Q_y$ can be translated equally well as $\sum P_1 Q_1 > \sum P_1 Q_2$ and as $\sum P_2 Q_2 > \sum P_2 Q_1$.

We can conclude from this that the true Kaldor criterion of 'over-compensating the losers' in situation 2 can never be deduced from index-number data, although the *impossibility* of doing so can be. If we could know that both the Scitovszky and the Kaldor criteria were fulfilled, then this would tell us at least that the utility–possibility curves of the two situations could not intersect *between* the two points corresponding to Q_1 and Q_2 (since the former criterion would imply that the curve of the first situation runs south-west of the point Q_2, and the latter criterion would imply that the curve of the second situation runs north-east of Q_1). But

[1] e.g. this might seem to be the interpretation, at first glance, of a passage in Little, *Critique of Welfare Economics*, p. 216, although he says 'corresponds to' instead of 'implies', and if 'implies' were really meant here the passage would be in contradiction with what is said above on p. 214.

while the former criterion can, the latter cannot be deduced from index-number data; so that from index-number data alone we can never be sure that the two curves do not intersect between the two points that are being compared.

Similarly, if the converse of these conditions were fulfilled (the possibility of redistributing the Q_1's so as to make everyone at least as well off as in situation 2 and the impossibility of redistributing the Q_2's so as to make everyone as well off as in 1), then we should again know enough about the positions of the two utility–possibility curves in the neighbourhood of the two points in question to preclude intersection between these points. But only one of these conditions (the second), and not both, can be derived from index-number data, so that such data cannot suffice for us to exclude the possibility of intersection between the two relevant points.

Summarizing, we can classify the cases thus:

$\sum P_2 Q_2 > \sum P_2 Q_1$ implies (as Mr. Kennedy has shown) the Scitovszky criterion (impossibility of redistributing Q_1's so that potential losers may bribe potential gainers).

$\sum P_1 Q_2 < \sum P_1 Q_1$ implies the impossibility of fulfilling the Kaldor criterion (redistributing Q_2's so as to enable gainers to compensate losers).

$\sum P_2 Q_2 < \sum P_2 Q_1$ does *not* necessarily imply the possibility of redistributing Q_1's so that potential losers may bribe potential gainers.

$\sum P_1 Q_2 > \sum P_1 Q_1$ does *not* necessarily imply the possibility of fulfilling the Kaldor criterion (of redistributing Q_2's so as to enable gainers to compensate losers).

More generally, index-number data having the form $\sum P_x Q_x > \sum P_x Q_y$ are capable of yielding a criterion whereas those which have the form of $\sum P_x Q_x < \sum P_x Q_y$ are not.

This summary does not, I think, say more than is implied (at least) in what has already been written in recent years on this subject (in particular by Mr. Little and in the 1950 Samuelson article). But it may possibly serve a use in sorting-out and tidying-up the four main cases on which discussion has turned.

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STRAIGHTFORWARDNESS IN VOTING PROCEDURES

By ROBIN FARQUHARSON

Introduction

In approaches to the study of collective decision, it has been customary to assume that all votes are cast 'sincerely', without recourse to ruse or stratagem. Both Black[1] and Arrow[2] make this assumption, explicitly excluding from formal consideration the effects of misrepresentation of preferences.

The restrictive nature of the sincerity assumption was realized much earlier by C. L. Dodgson,[3] who was also aware of the consequences of its relaxation: 'This principle of voting makes an election more of a game of skill than a real test of the wishes of the electors, and . . . my own opinion is that it is better for elections to be decided according to the wish of the majority than of those who happen to have most skill at the game.'[4]

Summary

In this paper an attempt will be made to illustrate the use which can be made of the mathematical theory of games[5] to elucidate such situations. Within the framework of a model applicable to a wide range of voting procedures, necessary and sufficient conditions will be established for the existence of a course of action which is 'unconditionally best', or 'straightforward', for a voter with any given scale of preferences. When (and only when) these conditions hold for a voting procedure, it offers the voter concerned no incentive to depart from sincere voting. In general, no voting procedure can be straightforward for all scales of preferences.

Divisional Procedures

We shall consider those varieties of procedure in which a choice is made from among a number of motions, or candidates, by successive stages at

[1] D. Black, 'On the Rationale of Group Decision-Making', *Journal of Political Economy*, Feb. 1948. See also D. Black and R. Newing, *Committee Decisions with Complementary Valuation*, London, 1951, and its review by L. Goodman, *American Journal of Sociology*, 1952, p. 611.

[2] K. Arrow, *Social Choice and Individual Values*, New York, 1951, pp. 7 and 80 n.

[3] C. Dodgson, *A Discussion of the Various Methods of Procedure in Conducting Elections*, Oxford, 1873, p. 10.

[4] C. Dodgson, *A Method of Taking Votes on More than Two Issues*, unpublished, Mar. 1876 (Bodleian Library).

[5] J. von Neumann and O. Morgenstern, *Theory of Games and Economic Behaviour*, Princeton (3rd ed.), 1953.

each of which a simple division occurs. At each division two choices are open to each voter; the result of the division determines what issue is taken next, until at last a single motion (or candidate) emerges as the voters' choice.

Within this class fall Parliamentary procedures, with 'Aye' and 'No' lobbies; the usual committee method of voting on amendments to a motion;[1] and some electoral procedures. It includes the Scots practice of election by paired comparisons, in which one candidate is excluded at each division,[2] and the procedure in which candidates are considered in succession for acceptance or rejection; but not of course those procedures (such as that of election by simple majority) in which a voter may have more than two effective choices at a single division.

The class of 'Divisional Procedures' may be represented by an especially simple model. If at the beginning of the voting there is a finite number of possible upshots to which the procedure can lead, then each division can be viewed as between two groups of these upshots. The group selected is in turn divided into two sub-groups of upshots, and so on. This continues until a single upshot becomes the decision. The usual committee procedure on amendments has three possible upshots when there is one motion before the committee and one amendment to it is proposed.

These may be set out as:

(A) the adoption of the original motion,
(B) the adoption of the motion as amended,
(C) no action.

The first division is that 'on the amendment'. In effect, it is between the groups (A, C) and (B, C). If the amendment is defeated, the second vote is taken between (A), the original motion, and (C). If it is adopted, the second vote is between (B), the amended motion, and (C).

To formalize the model: we have a finite set of upshots. This set is divided into two subsets such that:

(i) each element of the set is in at least one of the subsets;
(ii) not every element of the set is in both the subsets.

(We do *not* require that the two subsets be disjunct. In our example, the two subsets at the first division have the element (C) in common.)

Each subset is then treated in the same way as was the original set, until one-element sets are reached.

[1] Sir Walter Citrine, *ABC of Chairmanship*, London 1939, pp. 60–70.
[2] This procedure, that principally considered by Duncan Black, appears to be unusual in England. Cf. M. Ransom, *Chairman's Handbook*, pp. 151–4.

Any procedure so composed can be most simply visualized as a tree, whose terminal points are associated with members of the set of upshots. Thus our committee procedure has the form:

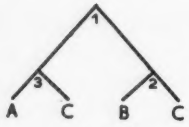

FIG. 1

Example

Consider a concrete example of a vote under this procedure. Jones is a candidate for employment in a library. Opinion is divided on his merits; a decision has to be reached on whether he is to be offered a senior post, a junior post, or none at all.

A motion is moved by his extreme partisans:

'*That Jones be appointed to a senior post.*' (*A*)

A more lukewarm section of the committee moves an amendment:

'*That the word "senior" be replaced by "junior".*'

The first vote is taken on the amendment. If it is adopted, the committee votes next on the amended motion:

'*That Jones be appointed to a junior post.*' (*B*)

If, however, the amendment is defeated, then the committee votes on the original motion (*A*). (*C*), Jones's unemployment, may thus be reached by two different routes.

Transition to a Game

We can now import sufficient apparatus into our model to bring it within the ambit of game theory.

There is no need to introduce a numerical 'pay-off function'; our voters will not be paying one another financial compensation. It is enough to suppose that each has some order of preference (weak or strong) in which he ranks the upshots.[1]

With regard to information conditions, we shall assume that voting at each division is by secret ballot, and that, while the result of each division is announced, the detailed figures of the voting are not made public. This excludes the possibility that voters deliberately imitate the earlier choices of others ('bandwagon effect'), or do the opposite ('underdog effect'), and ensures that no division has an indirect influence on any other.

[1] Cf. Arrow, op. cit., p. 13, and R. Farquharson, 'Théorie des jeux—Sur une généralisation de la notion d'équilibrium', *Comptes Rendus*, ccxl, Jan. 1955, pp. 46–48.

These assumptions made, and two ways of voting only being open to each voter at each division, we have a very simple 'game in extensive form'. Each voter has at each division two choices, and one information-set.[1] If we label the choices as 0 (= 'against') and 1 (= 'for'), then we can identify the two groups at the division p as '$G_p(0)$' and '$G_p(1)$'.

Thus if we number the divisions of our procedure as 1, 2, and 3, we can specify its structure as follows:

$$G_1(0) = (A, C) \qquad G_2(0) = (C) \qquad G_3(0) = (C)$$
$$G_1(1) = (B, C) \qquad G_2(1) = (B) \qquad G_3(1) = (A)$$

Each voter (we shall speak of n voters k, $k = 1, 2, \ldots, n$) has two possible choices at each division, and each division has two possible results. It is not necessary to require that voting should be by any particular procedure, or even that the same method should apply at each division. Instead we shall formulate three extremely general conditions (which may be taken almost as an implicit definition of a voting process).

I. Voting for a group never tips the balance against it.
II. Any one voter can be outvoted by the rest together.
III. No voter is completely powerless.

These can be formalized.[2] The result of the division is a function of the voters' choices; like the choices themselves, it takes the values 0 and 1. If C_k is a choice of the voter k, then $f(C_1, C_2, \ldots, C_k, \ldots, C_n) = 0$ or 1; an '$(n-1)$-tuple' of the form $(C_1, C_2, \ldots, C_{k-1}, C_{k+1}, \ldots, C_n)$ corresponds to a specification of the choices made by all players but k. If we denote any instance of such an $(n-1)$-tuple by Y, then, for all Y, $f(C_k, Y)$ of course $= 0$ or 1.

We restate the conditions as formal Axioms.

AXIOM I. For every k and every Y, $f(0, Y) = 1$ entails $f(1, Y) = 1$.
AXIOM II. For every k there is some Y such that $f(0, Y) = 1$, and some Y' such that $f(1, Y') = 0$.
AXIOM III. For every k there is some Y such that $f(1, Y) \neq f(0, Y)$

Having done so, we incur the moral obligation of demonstrating their consistency and independence. This is not possible for $n = 2$; the axioms together entail that there are at least three voters.

For $n = 3$ the axioms are consistent, but not independent—I and II

[1] This simplification has the incidental effect of performing a 'Dalkey deflation'. Cf. N. Dalkey, 'Equivalence of Information Patterns', in *Contributions to the Theory of Games*, ii (ed. H. Kuhn and A. Tucker), Princeton, 1953.

[2] Axiom I corresponds to a special case of Arrow's Condition 2. Axiom II requires that no voter should be decisive for any alternative; it is somewhat stronger than his Condition 5, much weaker than K. O. May's Condition III (*Econometrica*, xx, 1952, pp. 680–4). Axiom III is related to Arrow's Condition 4, though not by descent.

together entail III. Examples of functions realizing the seven possible truth-cases are given below:

I	II	III	$f(0,0,0)$	$f(0,0,1)$	$f(0,1,0)$	$f(0,1,1)$	$f(1,0,0)$	$f(1,0,1)$	$f(1,1,0)$	$f(1,1,1)$
T	T	T:	0	0	0	1	0	1	1	1
T	T	F:	—	—	—	—	—	—	—	—
T	F	T:	0	0	0	0	0	0	0	1
T	F	F:	0	0	0	0	0	0	0	0
F	T	T:	0	0	0	1	0	1	1	0
F	T	F:	1	0	1	0	0	1	0	1
F	F	T:	0	1	0	1	0	1	0	0
F	F	F:	1	0	0	0	1	0	0	0

The case T T F can only arise if $n > 3$; for $n = 4$ it is exemplified by the procedure in which the fourth voter is neglected and the result is dependent on the other three voters' choices as in the first row above.

For $n = 3$ the axioms are also categorical—they uniquely define simple majority decision. For higher values of n, however, they permit a wide range of procedures, including those where one voter has a casting vote (n even) and those requiring a two-thirds majority ($n > 5$).

For $n \geqslant 4$, the axioms are consistent and completely independent.

Formulation of Strategies

Now let us reduce the game to 'normalized form'. This requires specification of the 'strategies' open to each voter—each strategy is a plan of action stipulating, for each information-set, what choice is to be made. Since there are two choices at each division, and each voter has as many information-sets as there are divisions, a procedure with m divisions will offer each voter 2^m strategies.

In our procedure, there are three divisions. One of the eight strategies it affords could be expressed as 'Vote against everything', and represented by '000'. Similarly '110' could be expressed 'Vote for the amendment, and support the amended motion; but vote against the motion if it is put unamended.'

The procedure can now be thought of as an n-dimensional matrix, with each voter's strategies set out along one of its dimensions, and an upshot in each cell. More simply, from the viewpoint of the individual voter, it can be considered as an $i \times j$ matrix, with the i rows corresponding to his strategies, and the j rows to the possible combinations of strategies of the other voters. Each element of the matrix is an upshot, and he has an order of preference among the upshots. Being ignorant, however, of the strategies being chosen by the other voters, it will not in general be easy for him to decide what strategy to choose—for one which has a desirable upshot in some columns may have the worst possible result in others.

If there should exist a strategy, though, in whose row the upshot was, in every column, at least as high on his preference-scale as any other

upshot in that column, then the voter's choice would not be difficult. No matter what choice the other voters might make, he would have no reason to regret having chosen that strategy. He would not require to know or guess what the others were likely to do, but could make a confident choice.

A strategy with such properties will here be called 'straightforward'.[1] A procedure which offers a voter a straightforward strategy will itself be called straightforward for his preference-scale.

The Straightforwardness Theorems

We shall now show that a simple rule can be given for determining, from the extensive form of a divisional procedure, whether or not a voter with a given preference-scale will have a straightforward strategy.

Consider the divisions into groups, $G_p(0)$ and $G_p(1)$. We say that a division *weakly separates* a preference-scale if, when the upshots in the groups are ranked on the scale, then either

$$\text{Min. } G_p(0) \geqslant \text{Max. } G_p(1), \text{ or}$$

$$\text{Min. } G_p(1) \geqslant \text{Max. } G_p(0).$$

In words, a scale is weakly separated by a division if there is one group whose lowest-ranked element is at least as high as the highest element of the other group.

Return for a moment to the voting on Jones's employment. The first division divides the upshots into groups (A, C) and (B, C). Now there are twelve possible weak orderings of three upshots (plus the thirteenth trivial one in which they are all ranked equal).

Of these twelve, six are separated by the division: they are the scales

$$ACB; \quad BCA; \quad (AC)B; \quad B(AC); \quad A(BC); \quad (BC)A.$$

Since in this instance A = a senior post for Jones, B = a junior post, and C = Jones unemployed, each of these preference-scales is a fairly unlikely one. For example,

ACB is the scale of those who would like him in a senior post, but would rather have him unemployed than in a junior one.

$B(AC)$ is the scale of those who are anxious that he should have the junior post, but are indifferent whether he receives the senior post or none.

Yet we shall show that it is for these six scales, and these only, that the procedure is straightforward. Both for Jones's strong partisans, with

[1] Von Neumann and Morgenstern call such a strategy 'permanently optimal'; J. McKinsey, in *Introduction to the Theory of Games*, New York, 1952, speaks of 'a strategy which non-strictly dominates all others'. Since the concept is a useful one, a more manageable term for it seems desirable.

scale ABC, and his opponents, scale CBA, the procedure does *not* offer any definitely best course of action—they are forced to attempt to forecast the actions of the others and each other. The same is true for those, $C(AB)$, who merely wish to ensure that he is not appointed to the library; and for those who prefer him in one or other of the two posts, but would tolerate him in any event, ABC and BAC.

Thus this procedure has the effect of inciting a high degree of strategic calculation, since it is not straightforward for any scale which is likely to occur in practice.

To prove that this is so, we shall establish

THEOREM I: *A divisional procedure is straightforward for a voter if and only if every division in it weakly separates his preference scale.*

The condition is sufficient. Where G is used to denote a group $G_p(0)$ or $G_p(1)$, we shall use H to denote the other group of the pair. If the condition holds, form the strategy composed of choices for groups G such that Min. $G \geqslant$ Max. H. Consider any upshot, A, in that row. If any different upshot, B, occurs in the same column as A, then B must, by Axiom I, be an element of some H, such that A is an element of the corresponding G. But every upshot in every $G \geqslant$ every upshot in the corresponding H. Therefore $A \geqslant B$. Therefore the strategy is straightforward.[1]

The condition is necessary. Suppose that for the pth division the scale is not separated. Then both Max. $G_p(0) >$ Min. $G_p(1)$ and Max. $G_p(1) >$ Min. $G_p(0)$.

Consider any strategy embodying the choice of '0' at the pth division.

By Axiom III, it is possible that the result of the division will be '0' or '1' according to the choice made by the voter whom we are considering. And, by Axiom II, it is likewise possible that the other voters will choose strategies with the effect that, whatever our voter does, their choices ensure that if the result of the pth division is '0' Min. $G_p(0)$ is eventually selected, while if it is '1' the upshot is Max. $G_p(1)$.

And since Max. $G_p(1) >$ Min. $G_p(0)$, the combination of choices listed above will give at least one column in which the upshot of any strategy embodying '1' at the pth division is higher ranked than the upshot of any strategy with '0' in that position. Therefore no strategy with '0' can be straightforward.

But the same can be shown of any strategy containing '1' for the pth division. So the procedure cannot be straightforward.—Q.E.D.

[1] It should be noted that the condition ceases to be sufficient if the information-conditions which have been assumed are modified. For if each player knows that his choices will be known to others, then he knows that they can adopt strategies which involve either following his example, or the reverse. And since he cannot know which, no strategy is straightforward for him.

COROLLARIES

Define the converse of a scale R as the scale S such that $A \geqslant B$ on R if and only if $B \geqslant A$ on S.

C. 1. *A divisional procedure that is straightforward for any scale is straightforward for its converse.*

Define a 'weakening' of a scale R as a scale T such that $A \geqslant B$ on R entails $A \geqslant B$ on T.

C. 2. *A divisional procedure that is straightforward for any scale is straightforward for any weakening of that scale.*

C. 3. *A procedure with only two upshots is straightforward for every scale.*

This theorem enables us to read off instantly from the extensive form of a procedure the preference-scales for which it is straightforward.

It also enables us to prove that no divisional procedure can be straightforward for all possible rankings of three or more upshots.

THEOREM II. *No divisional procedure is straightforward for all scales when the number of upshots exceeds two.*

Consider the first division of the set of upshots. Since there are at least three, there will be a group G containing two elements A and B not identical with an element, C, of the group H.

Construct the preference-scale ACB. Then there is an element of H neither $\geqslant$ Max. G nor $\leqslant$ Min. G. Thus the scale ACB is not separated by the division, and the procedure will not be straightforward for it.—Q.E.D.

This result can be taken as a postscript to Arrow's conclusion.

Application of Theorem I

Let us complicate Jones's position a little by giving it the characteristics of an actual case. After a year in the junior post, his contract came up for renewal. The committee was again divided; particularly on the point of whether it would not be desirable to employ a fully qualified librarian, which Jones was not. There were still those who strongly advocated his promotion. After discussion it was agreed that the following procedure should be adopted:

The motion would first be put:

1. '*That a senior post be created.*' If passed, then
2. '*That the post be held only by a qualified librarian.*'

If (2) were rejected, then

3. '*That Mr. Jones be appointed to the senior post.*'

If (1) were rejected, the committee would proceed immediately to

4. '*That Mr. Jones's contract be renewed in his present post.*'

If (2) were accepted, or (3) or (4) rejected, no further vote would be taken—Jones's employment would end, and the resulting vacant post be advertised.

There are five upshots:

(*A*) Senior post, restricted, advertised.
(*B*) Senior post, unrestricted, held by Jones.
(*C*) Senior post, unrestricted, advertised.
(*D*) Junior post, with Jones reappointed.
(*E*) Junior post, advertised.

The division on the first motion can be looked upon as dividing the set of upshots into two groups which are in this case disjunct—(*A*, *B*, *C*) and (*D*, *E*). The whole procedure forms a tree of this form:

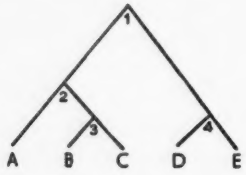

FIG. 2

Three cases can be taken as representative. First, that of the voters who are strong personal supporters of Jones. Clearly, they would regard *B*, his appointment to the senior post, as most desirable; also, they would rather see him continued in his junior one than with none at all. Their scale is thus *BD*(*ACE*). This scale is not separated by the first division, and it is evident that these voters are in a dilemma. If they vote for the first motion, they risk affecting the creation of the senior post without securing his election to it, and thus preventing his reappointment although they could have secured it by voting differently. On the other hand, if they vote against the motion they prevent him from securing the advancement which the other voters might well have been prepared to grant him. They have no straightforward strategy, and must resort to attempting the prediction of others' behaviour. Whatever they do, they may regret.

Consider also those voters who consider Jones suitable for his present position, but would rather see another candidate, not necessarily professionally qualified, in the senior post. If their scale is *CABDE*, they have no straightforward strategy, though it can never be disadvantageous for them to vote for the first motion.

Finally, consider those who favour the creation of the senior post, and feel that it should be restricted to a qualified candidate. It is immaterial whether, if this restriction cannot be achieved, they wish to retain Jones's

services in either the senior or the junior capacity (or even if they would support him for one, but not for the other). In every case, they can find at least one strategy which they can adopt with a quiet mind.

Out of the 120 possible strong scales, the procedure turns out to be straightforward for only 24—the following twelve and their converses:

ABCDE (Straightforward strategy = 1111, 'to support every motion that reaches a vote.')

ACBDE (Strategy = 1101, 'to vote for the creation of the senior post; if it is created, to support restricting it; if it is unrestricted, to vote against Jones's appointment to it; but if the senior post is not created, to support the renewal of his contract.')

ABCED	*BCDEA*	*BCEDA*	*DEABC*	*EDABC*
ACBED	*CBDEA*	*CBEDA*	*DEACB*	*EDACB.*

Conclusion

We have set up a model to represent a class of voting procedures, and we can determine the preference-scales for which any procedure in this class will be straightforward. Conversely, given any scale, we can construct for it a straightforward divisional procedure.

No attempt has been made here to treat of non-straightforward situations, to which the game-theoretical 'equilibrium point'[1] is directly relevant, or to deal in detail with the effect of replacing secret ballot by open voting.[2] It has been implicitly assumed, furthermore, that voters do not contemplate entering into coalitions. Each of these aspects opens the way to more general models—themselves susceptible of rigorous treatment on the same lines, and in some cases leading to quite unexpected conclusions.

Acknowledgements

The author is grateful to the Warden and Fellows of Nuffield College for making this work possible. For advice on the present paper, he warmly thanks the Warden of Nuffield; Mr. Asa Briggs; Mr. Jonathan Bennett; Professor D. G. Champernowne; Mr. Michael Dummett; Mr. Nigel Lawson; Mr. I. M. D. Little. He commits none of them to its conclusions.

[1] Cf. J. Nash, 'Non-cooperative Games', *Annals of Mathematics*, 1951, p. 286.

[2] Cf. R. Farquharson, 'Strategic Information in Games and In Voting', in *Information Theory* (ed. G. Cherry), London, 1956.

MARSHALL AND THE TRADE CYCLE[1]

By J. N. WOLFE

1. MOST of those who have discussed the relation of Keynes's *General Theory* with that of his predecessors have concentrated on contrasting the Keynesian theory, considered as a static system, with various 'Classical' static systems. This approach is, no doubt, very useful, but as an assessment of the development of economic thought it seems open to objection. It may be argued that what really interested Keynes was not so much his static model of the economy as a theory of the business *cycle*. And if that is the case, the appropriate comparison is not with a 'Classical' stationary state, but rather with 'Classical' accounts of the trade cycle.[2] This rather obvious difficulty has sometimes been surmounted by suggesting that the existence of a business cycle was not acknowledged by 'classical' writers, or that it was in any case clearly incompatible with their theoretical structures. The simplest way to test such a proposition is, clearly, to examine the work of earlier theorists, and the most obvious case to take is to compare the writings of Marshall on this point with those of Keynes himself. It may therefore seem surprising that one can only find scattered fragments of such a comparison in the literature of the last twenty years,[3] but there are two very good reasons why that should be so. Firstly, Marshall's observations on the trade cycle are scattered throughout his work, and hidden in the minutes of evidence of several Royal Commissions. Secondly, and more important, those economists who were principally concerned to evaluate the *General Theory* on its first appearance were

[1] I have been working on this subject for about five years and am therefore under obligation to a great number of people. I am afraid, however, that this paper will please none of them, and I present it with diffidence as an interim report. My greatest debts are to Professor J. R. Hicks, Dr. F. Cyril James, and Professor Sir Dennis Robertson.

Where I speak of Lord Keynes's work, I refer to his *General Theory of Employment, Interest and Money* (Macmillan, 1936).

[2] The *General Theory* was regarded by its author as 'a natural evolution' from the *Treatise on Money* (*General Theory*, p. vi). It is seldom suggested that the latter was anything but an attempt at the development of a theory of the trade cycle, and it seems unreasonable to believe that the *General Theory* differed very much in this respect. Perhaps the chief reason why a different view has commonly been taken is the widespread belief that Keynes intended to provide an analysis appropriate to a period of 'secular stagnation'. But the evidence for this is certainly very limited—one reference in the *General Theory* (pp. 307–8), and a few sentences in two magazine articles written some time later (*Eugenics Review*, Apr. 1937, and *New Republic*, July 1940). I am inclined to the view that even in these places Keynes went no farther than the suggestion that the business cycle might continue to fluctuate about a fairly low average level. I conclude, therefore, that to treat the *General Theory* as no more than a static model is to confuse method with result.

[3] On the interpretation of Marshall's trade-cycle theory, compare and contrast Milton Friedman, *Essays in Positive Economics* (University of Chicago Press, Chicago, 1953), pp. 65–68.

themselves so familiar with Marshall's work that they saw no reason for any explicit formalization of it, or comparison of it with Keynes's theory. Their attitude was, without doubt, justified at the time. But by now a new generation of economists has grown up, a generation which cannot be assumed to have the same familiarity with Marshall. For that reason alone it appears to me useful to set down the essentials of his views on the cycle, and to compare and contrast them with the views of certain later writers. Such a course seems to be particularly useful because some of the conclusions of this analysis seem to contradict certain widely held beliefs.

We may perhaps summarize certain main points of our analysis:

1. The trade cycle is given explicit and extensive treatment by Marshall.
2. Short-run movements of the general price-level are in Marshall the principal mechanism for the propagation of cyclical disturbances.
3. Keynes and later writers have almost completely ignored the role of price movements in trade-cycle propagation. Some reasons are suggested for the acceptance of this change in attitude, but it is criticized on several grounds.
4. Marshall uses a loanable-funds theory of interest in explaining short-term fluctuations in general prices.
5. The use of the quantity theory of money is reserved by Marshall for a discussion of those long-run movements in prices which are not associated with the business cycle.
6. Keynes, in contrast to Marshall, treats the business cycle as though it took place without any expansion of credit.

2. A central feature of Marshall's account of the course of the trade cycle is his emphasis on movements in the general price-level. When the general price-level is assumed to be stable, as in the *Principles* and the early parts of the *Economics of Industry*, the trade cycle is in abeyance.[1]

Marshall is anxious to distinguish between gradual price movements and those which are more violent. The former have no significant effect upon employment and general prosperity, although they may improve the standard of living of the working man. Violent price changes are far more injurious.[2]

The effects of price movements fall into two chief classes. First of all, some prices are bound to move less quickly than others:

> It however very seldom happens in fact that the expenses which a manufacturer has to pay out fall as much in proportion as the price which he gets for his goods. For

[1] Alfred Marshall, *Principles of Economics*, 8th edn. (Macmillan, 1947), pp. 593 and 62 note. See also Alfred Marshall and Mary Paley Marshall, *Economics of Industry* (2nd edn., Macmillan, 1886), pp. 68–69 and 150. A. C. Pigou (Ed.), *Memorials of Alfred Marshall* (Macmillan, 1925), p. 192.

[2] Alfred Marshall, *Official Papers* (Macmillan, 1926), pp. 9 and 20.

when prices are rising, the rise in the price of the finished commodity is generally more rapid than that in the price of the raw material, always more rapid than that in the price of labour; and when prices are falling, the fall in the price of the finished commodity is generally more rapid than that in the price of the raw material, always more rapid than that in the price of labour. And, therefore, when prices are falling the manufacturers' receipts are sometimes scarcely sufficient even to repay him for his outlay on raw materials, wages and other forms of Circulating Capital; they seldom give him in addition enough to pay interest on the Fixed Capital and Earnings of Management for himself.[1]

The second influence of a fall of prices is that it causes business men to expect a further fall, and so to refrain from production.

Even if the prices of labour and raw materials fall as rapidly as those of finished goods, the manufacturer will lose by continuing production if the fall has not come to an end. He may pay for raw materials and labour at a time when prices generally have fallen by one-sixth; but if, by the time he comes to sell, prices have fallen by another sixth, his receipts may be less than is sufficient to cover his outlay.[2]

Of course, the same thing holds *a fortiori* if production requires the use of borrowed capital. Marshall's famous suggestion for a commodity standard of value was put forward to mitigate this evil.[3] We shall consider this problem in more detail later on.[4]

Marshall was, of course, aware of other factors at work in the trade cycle. The most obvious of these is the effect of growing unemployment in one trade in reducing sales in another and so causing unemployment to spread.[5] But price movements seem almost to stand as prior conditions to such a development.

It has been widely argued that Marshall's account of the determination of the general level of prices is contained in his Quantity Theory of Money. I should like to suggest that, although this may be true for the gradual movements of prices which do *not* affect employment, it is not true for those violent fluctuations of prices which form the key to the trade cycle. In the short run he seems to regard credit expansion or contraction as the usual cause of a rise or fall in prices.[6] He even goes so far at one point as to call his description of the trade cycle 'The Ordinary Course of a Fluctuation of Commercial Credit'.[7] This alone would not necessarily argue against the view that the quantity theory was being applied; but the way in which

[1] *Economics of Industry*, p. 156. [2] Ibid.

[3] Alfred Marshall, 'Remedies for Fluctuation of General Prices', *Contemporary Review*, 1887.

[4] In view of the adverse effects postulated for price reductions, it is not altogether easy to defend Marshall's assertion in at least one place that a reduction of wages in the depression might improve employment. It is probable from the context, however, that he has in mind reductions in specific industries in which prices have become relatively high; cf. *Principles*, p. 710.

[5] Ibid., pp. 711–12.

[6] See *Official Papers*, pp. 21 and 23, and also Alfred Marshall, *Money, Credit and Commerce* (Macmillan, 1924), p. 19 (hereafter *M.C.C.*). But contrast *Official Papers*, p. 285, in which, for once, the expansion of the currency supply is given equal place with credit expansion.

[7] *M.C.C.*, p. 249.

a change in credit affects prices is clearly seen to be through its effect on the interest rate. Such subtlety is far beyond the range of the quantity theory.[1]

The mechanism involved is most easily understood if we consider the way in which an influx of gold by increasing the supply of credit increases prices:

> Equilibrium is found at that rate of interest . . . which equates supply and demand. But next, this equilibrium being established, we set ourselves to enquire what will be the result of a new disturbance, viz. the influx of a good deal of bullion into the City. This does not increase the amount of capital in the strictest sense of the word; it does not increase the amount of building materials, machinery, etc. But it does increase the amount of command over capital, which is in the hands of those whose business it is to lend to speculative enterprise. Having this extra supply, the lenders lower still more the rate which they charge for loans, and they keep on lowering it until a point is reached at which the demand will carry off the larger supply. When this has been done there is more capital in the hands of speculative investors, who come on the market for goods as buyers, and so raise prices.[2]

The theory here sketched may be said to rely upon the movement of the rate of interest to give an impulse to the trade cycle, and upon the resultant price changes to propagate the movement once it has started. In fact, of course, the impulse will usually be given by some real cause, a war or a good harvest,[3] for example, or by the mere growth or passing away of suspicion among lenders,[4] without any particular change in the rate of interest.[5] This is the basis of the resolution of one of the principal 'paradoxes' of Marshall's monetary theory: whereas a simple theory seems to indicate that interest-rates ought to move up in depression, and down in booms, they operate in the reverse fashion. Marshall's solution of the paradox consists in making the demand for (and supply of) funds move in the appropriate directions under the influence of changing confidence.[6]

It must be noted that the interest mechanism operates not only to give

[1] Cf. Knut Wicksell, *Interest and Prices* (London, 1936), p. 76. This account of the matter is, I think, formally compatible with Marshall's assumption that the money balances which individuals were prepared to hold were at any time uniquely determined by the level of money income. Keynes's more subtle account, which makes these balances a function of the rate of interest as well, appears to be mainly useful as an exploration of the varying response of the rate of interest with respect to changes in the quantity of money. Part at least of this difference in outlook of the two writers may be due to the different ways in which they were picturing the money being put into circulation. Marshall is probably thinking of the expansion of bank loans to business, while Keynes has in mind the purchase of government securities by the banking system. The Marshallian assumptions might, however, lay his system open to the charge that a fall in prices might be self-limiting because of the increase in the real value of stocks of wealth. But it is, I think, unlikely that Marshall would have thought this of practical importance in the trade cycle.

[2] *Official Papers*, p. 51.

[3] *M.C.C.*, p. 249.

[4] Or because of an external drain of currency. See *M.C.C.* p. 251. But it may be surprising to readers of Professor Hawtrey that Marshall nowhere, so far as I can discover, attaches any significance to the *internal* drain of gold as a cause of the turning-points. Apparently, therefore, the size of the gold supply does not set a limit to prices *in the short run*. Cf. *Official Papers*, pp. 38–39.

[5] Ibid., pp. 50–51.

[6] Ibid., pp. 273–4.

an impulse to the system, but also to give the price fluctuations which propagate that impulse much of their characteristic effect. This can best be appreciated by considering Marshall's use of the 'real rate of interest' as an element in his trade-cycle theory.

When we come to discuss the causes of alternating periods of inflation and depression of commercial activity, we shall find that they are intimately connected with those variations in the real rate of interest which are caused by changes in the purchasing power of money. For when prices are likely to rise, people rush to borrow money and buy goods and thus help prices to rise; business is inflated and is managed recklessly and wastefully; those working on borrowed capital pay back less real capital than they borrowed, and enrich themselves at the expense of the community. When afterwards credit is shaken and prices begin to fall, everyone wants to get rid of commodities, and get hold of money which is rapidly rising in value; this makes credit fall all the faster, and the further fall makes credit shrink even more; and thus for a long time prices fall because prices have fallen.[1]

Superficially, this doctrine seems a straightforward extension of the argument about the depressing effect of price declines to cover entrepreneurs operating with borrowed money. But its force depends upon the implicit assumption that the money rate of interest remains relatively fixed while prices rise or fall. And how can the money rate remain even relatively stable if both borrowers and lenders expect prices to move in the same direction?[2]

Such a situation must arise because the greater willingness of lenders to lend in periods of rising prices (and consequent prosperity) helps to keep the effective money rate of interest from rising sufficiently to keep the real rate stable, and vice versa.[3]

It is interesting to notice that there is implicit in this real rate of interest doctrine a rejection of what some have called the 'classical' interest mechanism.[4] The existence of that mechanism depends upon the assumption that savings will always appear on the market for securities as soon as they are decided upon, and that no other sources of demand for new securities exist. The fact that lenders may alter their willingness to lend and that credit may be increased or reduced shows that such assumptions do not hold in the Marshallian world. Marshall's doctrine of the rate of interest resembles very closely, in fact, the modern loanable funds theory.

It appears useful at this point to examine the cyclical turning-points more carefully.

An improvement in credit may have its rise in the opening out of foreign markets after a war, in a good harvest, or in some other definite change; but more often it arises from the mere passing away of old causes of distrust, which had their origin in some previous misfortune or mismanagement. Whatever its origin, when once begun it tends to grow.[5]

[1] *Principles*, pp. 594–5.
[2] Cf. R. F. Harrod, *Economic Essays* (Macmillan, London, 1952), pp. 227–8.
[3] *M.C.C.*, pp. 249, 250 et seq.
[4] *Principles*, p. 711.
[5] *M.C.C.*, p. 249.

In *Money, Credit and Commerce* the cause of the downturn is set out in detail. Here the first step is seen to be the growing desire of lenders to decrease their loans as the boom progresses since they 'are among the first to read the signs of the times'.[1] The fear of lenders may be due to the increasingly unfavourable state of the exchange. 'An adverse movement of the exchange is often both a symptom and a cause of a slackening of the flow of credit.'[2] But whatever the cause of the growing reluctance of lenders to lend,

> the lenders of capital already wish to contract their loans; and the demand for more loans raises the rate of interest very high; distrust increases, those who have lent become eager to secure themselves; and refuse to renew their loans on easy or on any terms. Some speculators have to sell goods in order to pay their debts; and by so doing they check the rise of prices. This check makes all other speculators anxious, and they rush in to sell.[3]

The effect of this increase in the discount rate has a considerable role to play in bringing about a downturn, for it is apt to induce at least some bulls to sell out, rather than to carry their stock-exchange holdings over at the higher rate. This might be of little significance by itself, but the fact that bulls are expected to behave that way causes the bears to increase their pressure, and the bulls to become more pessimistic yet. If the market is in a nervous state, the fall in security prices may be appreciable, and may even become cumulative. This has, of course, a tendency to make credit much tighter, and thus to exacerbate a commercial crisis.[4]

So prices begin to fall, and creditors to demand payment at once. This causes some to fail, and 'failure and panic breed panic and failure. The commercial storm leaves its path strewn with ruin.'[5] But—and this is important—

> The immediate *occasion* of a commercial crisis has often been a few business failures, that would have been unimportant if the solid framework of business had not been overlaid by much rather loose credit: but the real *cause* of the crisis was not to be found in those small failures. It lay in the slender hold which much credit at the time had on solid foundations.[6]

Finally, a word about the cause of the long continuation of certain periods of depression:

> The chief cause of the evil is a want of confidence. The greater part of it could be removed almost in an instant if confidence could return, touch all industries with her magic wand, and make them continue their production, and their demand for the wares of others.[7]

[1] *M.C.C.*, p. 250. [2] Ibid., p. 251. [3] Ibid., p. 250.
[4] Ibid., p. 258. Marshall does not expand on the effect of changes in stock-exchange prices. Keynes, on the other hand, makes such changes important in two ways: first of all, they change the effective rate of interest at which existing firms can obtain more funds, and, secondly, they change the price at which new enterprises can be sold to the public. See *General Theory*, p. 151.
[5] *M.C.C.*, p. 250. [6] Ibid., p. 251. [7] *Principles*, p. 710.

There is no natural periodicity in Marshall's cycle (in contrast with that of Keynes),[1] but it is clear that each phase is usually, if not always, a natural result of the phase which preceded it.

3. We are now in a position to contrast the views on the trade cycle of Marshall and Keynes. One thing is clear from the start: whatever differences may exist, they are certainly not over the *possibility* of a trade cycle.

The most obvious difference between these theories is the place which movements of the price-level occupy in them. Keynes's functions are expressed in terms of wage units, i.e. his theory is more or less independent of the price-level.[2] Marshall, as we have seen, laid great emphasis upon commodity-price changes as the means by which the cycle was propagated. The great importance attached by Marshall to price fluctuations is certainly characteristic, but it would be a mistake to believe that this attitude was not widely shared. Wicksell made the 'cumulative process' or movement of prices the centre of his work, and justifies this by remarking that when prices fall business is paralysed, and growing unemployment and falling wages result.[3] Keynes was fully aware of the effects on employment of a fall in prices when in 1923 he wrote *A Tract on Monetary Reform*.[4] Professor Robertson, writing in 1926 on *Banking Policy and the Price Level*, saw fit to subtitle his work 'An Essay in the Theory of the Trade Cycle'.[5] And

[1] *General Theory*, pp. 314 and 317.

[2] Deflating consumption, investment, and income by the wage unit comes to much the same thing as expressing them in real terms, that is, independently of the price-level, under certain quite simple assumptions. Assuming with Keynes that prices move in the same direction and in the same proportion as wages, this holds good whether the wage unit is expressed as a sum of money or as a basket of goods. Of course, in the later parts of his book Keynes drops this assumption and argues that, in so far as each worker is not paid on the basis of efficiency earnings, the employment of less efficient workers will, with constant money wage rates, drive prices up. (We may alternatively say, either that the wage basket is reduced and the level of the variables, expressed in real wage units, is consequently increased, or that the level of the variables expressed in money wage units becomes less than their level expressed in dollars of constant purchasing power.) Such price rises do not, however, have any marked effect on the course of the cycle as sketched by Keynes. They seem to be caused by preceding changes in output, and it is not suggested that they have any considerable role to play in determining subsequent changes, except as outlined in the paragraph below.

The important functions expressed in wage units are the marginal efficiency of capital, the propensity to consume, the supply of money, and the liquidity preference function. The supply curve of labour is, of course, given in money terms, at least before full employment is reached. Keynes makes the propagation of the cycle largely dependent upon shifts in the marginal efficiency of capital schedule due rather to the sudden changes of mood on the stock exchange and changes in the real factors influencing investment than to expected price changes. There is, however, one major exception to this rule. On p. 317 of the *General Theory* Keynes indicates that the rising cost of production of capital goods may provide firm ground for the sudden reversal of the stock exchange's views on the future which tends to characterize the downturn.

[3] Wicksell, op. cit., p. 2.

[4] Reprinted in J. M. Keynes, *Essays in Persuasion* (Rupert Hart-Davis, London, 1951), p. 101.

[5] D. H. Robertson, *Banking Policy and the Price Level* (P. S. King & Son, London, 3rd impression, revised, 1932).

the theme of Professor Hicks's *Value and Capital* is, of course, very similar.[1] It may, in fact, be argued that the concentration upon price movements as basic to the propagation of the trade cycle is sufficiently important to set these writers off as a separate school of neo-classical business-cycle theory.

A consideration of the factors which may have made such an approach unfashionable does much to show why it is reasonable to regard Keynes's major revolution as the development of a theory to explain how the level of economic activity might change *without* any appreciable change in the commodity price-level. These factors are quite varied, but may be summarized under four headings:

1. *Theoretical.* Price changes were for a long time the only ones which could be definitely established as features of the trade cycle. The figures for output and employment were, until well into the present century, both sketchy and unreliable. It seems to be a characteristic of theoretical reasoning that it is usually directed to the provision of explanations for phenomena that are known beyond any doubt. So when output and employment variations became subject to easy measurement it was only natural for theory to take a new direction.

2. *Factual.* It seems probable that with the growth of trade unions and the solidification of trade associations the movement of prices at less than full employment levels of output has become less pronounced. At any rate the fluctuations of employment and output must have seemed (in the period of the thirties at any rate) to have become *relatively* more pronounced, and to warrant a shift in the emphasis of theory. To this consideration must be added the fact that later experience seemed to indicate that, in the early stages of an upswing at least, output tends to grow before prices rise very considerably. So that for this stage of the cycle at least, a price-orientated theory is clearly undesirable.

3. *Other developments in theory.* As long as value theory was organized on the basis of industries and an industry price under more or less perfect competition, it was only natural that changes in output should be regarded as dependent on previous price changes. As soon, however, as the development of theories of imperfect and monopolistic competition focused attention on the elasticity and position of each firm's particular demand curve, this assumption was no longer logically satisfactory. It has almost certainly been the case that the ease with which the theory of imperfect competition can be integrated with Keynes's approach has helped increase the popularity of the latter. It seems, however, from the lack of explicit reference to this problem, almost equally certain that this aspect of Keynes's system was an entirely accidental (or perhaps unconscious) development.

[1] J. R. Hicks, *Value and Capital* (Oxford, 1939).

4. *Organization of the theoretical structure.* So far the factors we have advanced are fairly substantial in nature. It may be, however, that even more influence must be attributed to Keynes's desire to change the organization and approach of business-cycle theory. Marshall was content to divide his theory into two parts, one dealing with an economy having a stable price-level, the other with one without it. By assuming the relative stability of the rate of interest expressed in money terms (the variability of the real rate of interest) he causes the latter system to produce unemployment and reduced output. Keynes, on the other hand, can be conceived of as approaching the whole problem from the side of the theory of money. By showing the radical flaw in the mechanism for establishing the rate of interest which makes it insensitive to current business influences, he establishes the possibility of variations in effective demand. From that point it is not far to the division of the theory into two parts, one assuming full employment, the other under-employed resources. The principal difference between these two alternative forms of organization is the policy prescriptions that leap to mind in examining them: in the one case the stabilization of prices, perhaps by an accounting formula, in the other measures designed to increase the volume of effective demand directly.[1]

There is some reason to believe that the reaction against price orientation has gone too far. After all, commodity prices do usually move during the cycle, and an ideal theory ought to give due weight to this fact. It is interesting to notice that Marshall's system, as we have expounded it, bears a striking resemblance to that of Professor Hicks in *Value and Capital*. The former relies, however, upon an elasticity of expectations which is greater than unity, while the latter concentrates attention on the case of unit elasticity. Because he does so, Professor Hicks is prevented from making the anticipation of future price changes a cause of unemployment. He is instead forced to place all his emphasis upon the effects of sticky wages in causing a substitution away from labour and towards other factors. But Professor Hicks has not explained how such substitution could reach significant proportions in the short run.

Marshall's implied assumption that the elasticity of expectations is greater than unity throws some very revealing light on modern developments in trade-cycle theory. Because of this assumption, Marshall had no difficulty in explaining how an upward or downward movement, when once it had started, could go on and gather force. In fact, on this assumption, the real problem is how to explain the fact that such movements eventually slacken and even reverse themselves.

[1] Cf. the remarkable scheme proposed by Mr. Harrod, who seems here to have gone back to a Marshallian approach. R. F. Harrod, *Towards a Dynamic Economics* (Macmillan, London, 1949), pp. 161–9.

Now one of the reasons which has been advanced for using modern multiplier-accelerator theories of the trade cycle is that they provide a convenient account of this cumulative process.[1] It can be seen, however, that no matter how much it may add to our knowledge, the acceleration principle is not *necessary* to the *existence* of a cumulative process. It only becomes so if there are no price changes, or if the elasticity of expectations is less than unity. We need not, then, *rely* on the action of the accelerator except as an auxiliary force moving us up (or, on some accounts, down) in the cycle. This consideration appears to be important when we remember the objections of those practical people who regard the value of the accelerator as in any case too low to produce the desired effect.[2]

The field of employment of the accelerator could, then, easily be restricted to the explanation of the turning-points of the cycle, and more particularly the upper turning-point. The foregoing discussion appears, moreover, to open up a whole new set of possible explanations for a downturn, especially if we regard price expectations as themselves dependent to some extent on the level of investment and the rate of growth of economic activity. For example, a boom might be killed because price expectations ceased for some reason (say, a decrease in the rate of growth of income) to be elastic, and because the accelerator mechanism was not then able by itself to support the upswing.

This reduced emphasis on the accelerator is made more acceptable because of another change in trade-cycle theory. At one time the accelerator was thought essential because it could explain the greater relative amplitude of the fluctuations in investment goods industries. Nowadays, the peculiar shape and relative stability of the consumption function is often regarded as sufficient explanation of this phenomenon.[3]

From another point of view the accounts of Marshall and of Keynes stand together in contrast with much recent theory of the trade cycle. Both of these writers emphasize the volatility of expectations and the importance of confidence on the course of the trade cycle. More recently,

[1] J. R. Hicks, *A Contribution to the Theory of the Trade Cycle* (Oxford, 1949).

[2] J. Tinbergen, 'Statistical Evidence on the Acceleration Principle', *Economica* (N.S.), 1938, pp. 164–76.

[3] It is interesting to notice that Marshall does not blame the principle of acceleration for the fact that fluctuations are apt to be greatest in capital goods industries. It is the fact that credit is used for expansion, and that credit restriction (or a mere cessation of the growth of credit) will reduce this expansion, which appears to be crucial. This is only one aspect of a tendency to place a good deal of weight on the effect of changes in the supply of capital.

'For while credit is expanding, the extra purchasing power which credit gains goes chiefly to trades and trading companies, who, whether they want it to begin or extend their business, are sure to spend a great part of it on machinery, buildings, ships, railway material, and other forms of Fixed Capital. On the other hand, where credit is contracting, many find their means of purchasing altogether cut off, while those whose means are not straitened do not care to invest in Fixed Capital until they think prices have nearly reached their turning point.' (*Economics of Industry*, p. 163.)

it has become fashionable to minimize the importance of such elements, and to rely instead on certain 'real' forces which the cycle is itself said to generate. It is not easy to explain this change in opinion, but it may be that it is partly the result of a growing belief in the regular periodicity of the trade cycle. Perhaps of equal importance is the greater opportunity such non-psychological factors seem to offer to econometric testing. This may possibly be regarded (*pace* Professor Samuelson) as an interesting (if wrong-headed) result of the growing demand for having theories cast in an 'empirically meaningful' form!

An important point in which Marshall's theory appears to differ from that of Keynes's is in the role which credit plays in their account of the cycle. For Marshall the expansion and contraction of credit is a central feature of the cycle. It is itself almost a necessary condition for the price movements which are the immediate causes of cyclical fluctuations of employment. But in the *General Theory* the creation of credit plays a much smaller role in causing the cycle. It is the change, or the expected change, in profitability which causes changes in the amount of investment. The money market does not, apparently, offer any resistance to such a change in investment. The rate of interest may indeed be affected, but only as the result of a change in the amount of money required for transaction purposes, a change which can, by hypothesis, come about only *after* the change in activity brought about by the change in investment has had time to manifest itself. Keynes's later introduction of 'finance'—the money required to bridge the gap between the planning and execution of investment decisions—goes some way to restore the importance of credit expansion in the theory of the trade cycle. Yet he does not stress the fact that since the saving engendered by investment may be done by people different from those who perform the investment, the intercession of the banking system may be necessary to sustain even relatively stable interest rates. This is because money may be held as a form of savings, as well as for transaction purposes, and therefore the demand for it may increase much more than in proportion to income as savings rise. It is almost as though Keynes were attempting to show that a trade cycle is *possible* without any creation of new money. If that were his intention, there is no doubt that he has succeeded (given certain assumptions about the speculative demand for cash balances). But it may be asked whether our knowledge of the *usual* course of the cycle has been much increased.

That Keynes himself believed in the importance of the separation of trade-cycle theory from a theory of monetary expansion is, I believe, borne out by his later reflections on his own work. He seems to imply in one place that the great novelty of his theory lies in the assertion that the equality of saving and investment frees economic expansion from the limitations

sometimes thought to be characteristic of an appeal to the money market.[1]

These limitations were thought to be due to the inability of credit creation to call forth real savings to support the investment decisions which it facilitated. In slightly differing forms this appears to be the basis of both the so-called 'Treasury View'—that a public works programme would only result in the diversion of investment from one sector to another—and of the view that the crisis was due to the ephemeral nature of credit-induced 'forced saving'. But these objections are not Marshallian. In opposing them Keynes made no break with traditional Cambridge theory.

There are, of course, many more points of difference between Marshall and Keynes. One could mention the role of the stock exchange, the assumptions about the effects of wage cuts, and so on. I suspect, however, that an expedition into such well-mapped territory is unlikely to add very much to our present knowledge.

[1] J. M. Keynes, 'Alternative Theories of the Rate of Interest', *Economic Journal*, vol. xlvii (1937), pp. 248–50.

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IMPORT PRICES AND INFLATION: THE EXPERIENCE OF THE UNITED KINGDOM 1950–2

A Reply by J. R. PARKINSON

In the October issue of *Oxford Economic Papers*, Mr. G. Maynard has developed an interesting and lucid exposition of the inflationary and deflationary influences at work in the years 1950–2. The interactions of the various factors governing the situation at any point of time were undoubtedly very complex, and although it is possible in principle to examine them all, it is desirable in a statistical investigation to concentrate attention on the few which appear to be of greatest importance. My own model of price formation is rather oversimplified but I think it has the merit of directing attention to some of the most important reactions to a rise in import prices. The main points may be summarized briefly: import prices are taken as given for the United Kingdom (a somewhat doubtful assumption for a country with a large stake in world trade); certain assumptions are made about producers' margins which it is supposed are sufficient to determine consumption prices; wages are assumed to keep pace with the appropriate index of consumption prices; and a new round of price adjustments is set in motion as a result. A large number of factors are neglected in the arithmetical model developed from this approach. No account is taken of taxation, and the effect of rising absolute profits on prices is assumed to be roughly offset by changes in productivity.[1]

Mr. Maynard has taken me to task for neglecting the demand side of the price equation. It was with some trepidation that I decided to concentrate attention on the side of costs and leave demand out of account, but the step was taken overtly and it was expressly stated that prices were not regarded as being determined by marginal costs and revenues. Clearly this amounts to assuming that demand would always be adequate to take up the supply forthcoming at prices determined on the basis of costs. For much of the period considered and for many products this is probably not far from the truth but, as Mr. Maynard points out, from about the middle of 1951 onwards it was getting more difficult for some producers to charge their habitual profit margins in the face of consumer resistance.

[1] Mr. Maynard appears to have misunderstood my references to profits and productivity. In my model no allowance is made for the effect of higher monetary profits per unit of output on the price-level and equally no allowance is made for the price-reducing effects of increased productivity. Although productivity probably fell towards the end of 1951 and certainly fell in 1952, it was probably greater at the end of 1951 than it had been in mid-1950.

Even in these cases producers had, however, the choice of reducing their profit margins in order to maintain sales or maintaining their margins and either producing for stock or cutting down production. Probably the brunt of margin reductions fell on wholesalers and retailers, though reductions in manufacturers' margins may also have been considerable. It is quite impossible to decide what cuts manufacturers accepted from annual figures of profits, partly because of difficulties over stock appreciation and depreciation; but a fall in gross profits in the textile industry from £260 million in 1950 and £257 million in 1951 to £148 million in 1952 does not suggest that margins were cut to the bone. Mr. Maynard's illustrative comparison of estimated and actual price increases between mid-1950 and end-1951 suggests that costs were not fully passed on in consumers' industries, though some doubt must be felt about figures computed in this way. The difference is not, however, so great as to suggest that a prediction of consumers' prices at the end of 1951 prepared from a correct estimate of the movement of import prices would have been so much out as to render it useless for planning purposes. And since for capital and investment goods the difference appears to be in the other direction, much less error would have resulted in estimating the price-level of total output. In spite of the limitations of an approach solely from the side of costs a good deal can be learnt about the workings of the economy in boom conditions.

In other conditions my model is much less useful and it is clearly unsuitable for analysing events in much of 1952. It is also unsuited to deal with a situation in which a permanent deterioration in the terms of trade has to be accepted, when, in other words, overseas demand limits the extent to which export prices can be raised in response to a rise in prices of imports. If, in such circumstances, output cannot be increased, either wage-earners or non-wage-earners or both must accept some reduction in their real incomes, and it is not possible to assume that both real wages and real margins are maintained, which is implicit in my model once equilibrium has been restored. My model can be made to work completely only in the kind of situation envisaged by Mr. Maynard in footnote 14, in which a rise in import prices is ultimately met by a rise in all wage and profit incomes of the same proportionate amount. Mr. Maynard's conclusion on the basis of this model that wage rates must rise in the same proportion as import prices to leave real consumption demand unaffected appears to assume that profits and wages both rise in the same proportion; if profits rise less than wages (because costs are passed on only after some delay) consumption may be maintained even though wages rise in a smaller proportion than import prices, but this would imply some reduction in the level of home-financed investment.

Mr. Maynard very rightly emphasizes the difficulty of finding appropriate policies to deal with rising import prices and consequential inflation, particularly when an adverse movement in the terms of trade is a temporary phenomenon. When resources are largely fully employed a deterioration in the balance of payments is almost inevitable. The deterioration will be less if an increased volume of imports can be purchased before prices rise fully and if purchases can be reduced at the market peak. If an approaching peak in import prices can be identified, it may be desirable for government action to be taken to discourage importing and the accumulation of unnecessary stocks. Credit restrictions might be effective in reducing imports at this time, and if they were applied by other importing countries at the same time the rise in import prices might well be restrained. There is certainly a dilemma between discouraging wage increases in the interest of stability of costs and prices and encouraging them on the grounds that an increase will help to right the terms of trade. The dilemma might be met by attempting an appreciation of the pound, though I am doubtful of the practicability of doing this. An increase in export prices need not, of course, require an increase in labour costs before it is carried out. A more flexible price policy on the part of exporters could suffice to exploit the overseas market to the fullest extent, though it might be objected that this would provide further inflationary forces in other countries, spoil future sales prospects, or give a politically undesirable fillip to profits at a time when wage increases were being discouraged. I am not inclined to advocate the mitigation of a rise in import costs by increased subsidies on consumer goods, because some reduction in consumption is called for when the terms of trade deteriorate. If subsidies are not increased it will obviously be difficult to restrain wage increases. There is, however, no reason to despair of some restraint being exercised even in a country in which labour is highly organized. A high degree of restraint was exercised in Switzerland during the Korean boom, and the Dutch Government was successful in obtaining a reduction in real wages in order to restrain demand;[1] and with postwar privations behind us, a cut in living standards could be more readily accepted.

[1] See *Financial Stability and the Fight Against Inflation*, O.E.E.C. 1951, pp. 81 and 73.

A Rejoinder by G. MAYNARD

In connexion with Mr. Parkinson's 'Reply' I should like to make four points, the first being of a general nature, and the remaining three relating to particular points raised by Mr. Parkinson.

1. Mr. Parkinson is obviously right when he says that a particular historical state of affairs is the result of a complex interaction of factors, but that in a statistical investigation it is desirable to concentrate attention on the more important of them. It is obviously better, too, to analyse a price inflation with the aid of a simple cost-of-production model rather than to relate it in some nebulous fashion to an increase in the quantity of money. But the particular historical period which we are both trying to explain was characterized by a limited recession in the production of consumption goods as well as by rising prices and incomes. Whereas the latter might plausibly be explained by a simple cost-of-production model, the former certainly cannot be. In other words, Mr. Parkinson has not considered a sufficient number of the interacting factors. The model which I have used attempts to bring into the explanation changes in monetary demand as well as changes in cost; and, rightly or wrongly, I have argued that the price and income inflation associated with rising import prices was not independent of the fall in real consumer demand. In addition this slightly more complex model shows that a simple cost model tends to overestimate the actual rise in the price-level.

2. Mr. Parkinson makes it clear that I did not completely understand the way in which he arrived at his estimates of consequential changes in final output prices, given the rise in import prices and wage rates (Table V, col. 3). The misunderstanding, however, arose from my acceptance of the assumption, which he appears to make somewhat earlier in his paper,[1] concerning the fashion in which producers determine their profit margin, namely that the profit margin is a given percentage of costs; and this assumption I thought was used in arriving at his estimates. It is true that on page 186 Mr. Parkinson points out that his estimates take no account of changes in profit margins, but by this I understood 'no change in *percentage* profit margins'. My footnote, to which Mr. Parkinson now refers, pointed out that reference to changes in absolute profits was not significant for deciding what had happened to percentage profit margins. However, it is now evident that the estimates of column 3, Table V, are based on constant *absolute* profit margins, the rationale being that the price-raising effect of constant *percentage* profit margins is roughly offset by increases in labour productivity. Theoretically of course this assump-

[1] See pp. 179 and 181.

tion is not very satisfactory, for, given a percentage profit margin applied to costs, absolute profit per unit of output must rise unless the increase in labour productivity is sufficient to prevent any rise in costs at all. Statistically, in the absence of relevant information, the assumption may be useful.

I do not wish to take issue with Mr. Parkinson over the question of labour productivity, for the evidence does not permit dogmatic conclusions. My decision to ignore changes in productivity was based on information contained in the Treasury's *Bulletin for Industry*, November 1953, which seems to suggest that productivity was roughly the same at the end of 1951 as it was at the middle of 1950. If in fact the cost-reducing effect of increased productivity was insignificant, Mr. Parkinson will no doubt agree that a larger rise in end-product prices might have been expected (given the rise in costs and constant percentage profit margins) than in fact occurred. In the event, percentage profit margins in respect of some goods were probably not maintained, and I have tried to explain this with reference to the demand side of the price equation.

3. It is true, as Mr. Parkinson says, that the model presented in footnote 14 of my article[1] assumes that wages and profits rise in the same proportion; and it is also true that if wages rise in greater proportion than profits but nevertheless in less proportion than import prices, real consumption may still be maintained. But this latter result requires first, that despite a fall in their real incomes non-wage-earners do not reduce their real consumption; and second, that wage-earners do not suffer from money illusion: in other words, that the over-all propensity to consume with respect to money-income rises (or, as Mr. Parkinson puts it, the level of home-financed investment falls). Two factors are relevant in determining the consumption behaviour of non-wage-earners. In the first place, the time-lag between the earning of profits and their distribution makes it somewhat difficult to predict how profit-earners will react to a rise in prices and a prospective rise in receipts. In the second place, the profit margin in this model includes elements of non-wage non-profit income (for example, rent) which would tend to be 'sticky' and for which the lag argument would not be relevant. It is easier to assume a constant propensity to consume than to estimate the combined effect of these factors!

4. I agree with Mr. Parkinson that a deterioration in the terms of trade which is permanent, or at any rate likely to persist for a considerable length of time, must call forth a relative reduction in real consumption.[2] On the other hand, a temporary worsening in the terms of trade, brought

[1] *Oxford Economic Papers*, Oct. 1955.

[2] Given certain assumptions as to the required minimum level of non-consumption expenditure.

about, for example, by a boom in commodity prices, might be more sensibly and easily countered with a reduction in overseas investment, i.e. a decline in foreign currency reserves if the balance of payments was initially in equilibrium.[1] As I have tried to show, however, a worsening of the terms of trade of this type tends to bring about a fall in real consumption even in the absence of specific policy measures, unless a considerable rise in wages is allowed. Both of these developments are undesirable, the former because a cut in consumption will not necessarily lead to an immediate rise in exports or fall in imports, the latter because a rise in wages tends to be permanent and leads to export difficulties when the terms of trade return to their former level. If exporters spontaneously lift export prices without being forced to by a rise in their wage costs, this will limit both the deterioration of the terms of trade and overseas disinvestment, but not by itself prevent real consumption from falling. On the other hand, it would make wage restraint more difficult. The weight of these arguments lies heavily in favour of a policy of consumer-good subsidies, provided the temporary nature of the worsening of the terms of trade can be accurately foreseen.

[1] Which, after all, is the function of foreign currency reserves.

SOME THOUGHTS ON MARXISM, SCARCITY, AND GOSPLAN

A Comment by P. J. D. WILES

1. I am bound to say that I can find nothing at all on scarcity economics in chapter 7, Book I, of the *Wealth of Nations* (or the very similar chapter 10). An economist who talks in a purely descriptive and rather lowbrow way of how factors *do* move between occupations cannot be said to have solved, discussed, or even posed the scarcity problem. He is simply talking about movements of factors. Nor is stress on the virtues of capital accumulation evidence for an interest in the 'question of the allocation of scarce resources between production for the present and production for the future'.

Mr. Meek's confusion in all this[1] lies in the fact that almost any economic question *involves* the scarcity problem (unemployment is perhaps the only exception); nay, can be shown logically to entail some implicit attitude to this problem. Just as this is so of, say, inflation or the full cost principle, so it is true of the shift of factors between occupations or of the desirability of capital accumulation. Easy enough, writing after Jevons and Menger and Robbins have done the work, to perceive these logically entailed implicit attitudes in earlier economists. But they themselves did not grasp the entailment or make anything explicit.

2. 'And with Marx', writes Mr. Meek, 'the connexion [between the *labour* theory of value and the allocation of the scarce factor *labour*—only—in accordance with the needs and demands of society] was made quite explicit.' In support of this contention one would demand to see a long, continuous, and closely reasoned chapter in Marx's writings. We are given instead three sentences.

The first is from *Capital*, vol. 3:

> In the determination of value the question turns around social labour time in general, about that quantity of labour, which society in general has at its disposal, and the relative absorption of which by the various products determines, as it were, their respective social weights.

The second is from *Capital*, vol. 1:

> All the different kinds of private labour, which are carried on independently of each other, and yet as spontaneously developed branches of the social division of labour, are continually being reduced to the quantitative proportions in which society requires them.

[1] 'Some Thoughts on Marxism, Scarcity, and Gosplan', *Oxford Economic Papers*, Oct. 1955.

The third is from *Value, Price and Profit*, chapter 6, though the sentence in brackets that leads up to it is Mr. Meek's own:

> [The unit value of each commodity, given this allocation, was of course determined primarily by technical considerations, but in order that the goods produced should be a 'commodity' in the Marxian sense, and thus possess exchange value, the labour devoted to its production] must be subordinate to the *division of labour within society*.

Now in fact if we look at this sentence in its context it turns out to have nothing at all to do with scarcity economics. Marx says (his italics):

> A man who produces an article for his own immediate use, to consume it himself, creates a *product*, but not a *commodity*. As a self-sustaining producer he has nothing to do with society. But to produce a *commodity*, a man must not only produce an article satisfying some *social* want, but his labour itself must form part and parcel of the total sum of labour expended by society. It must be subordinate to the *division of labour within society*. It is nothing without the other division of labour, and on its part is required to *integrate* them.

We are indeed scraping the bottom of the barrel if this passage is held to be relevant. Similarly the passage from Marx's letters to Kugelmann referred to in Mr. Meek's footnote turns out not strictly to deal with the connexion between scarcity and the labour theory of value.

If these widely scattered, ill-expressed, and obscurely thought-out sentences make Marx's attitude to a hugely important problem 'quite explicit', the word 'explicit' is acquiring new meanings. This is just like arguing that Smith's Book I, chapter 7, shows an explicit interest in scarcity. On the contrary, these quotations go to show just how little Marx thought about scarcity, how implicit and unconscious was his attitude to it. It is well to remember the great aphorism of A. N. Whitehead: 'Everything of importance has been said before by somebody who did not discover it.'[1]

Marx, then, did not make the connexion between 'scarcity' and the labour theory of value explicit. The meagre quotations bear no such weight. Nay, more, Mr. Meek himself makes a most damaging admission on this point (in his footnote 7, p. 288):

> According to some commentators, Marx thought that the 'scarcity problem' under socialism would be solved with the aid of the labour theory of value—i.e., by making exchange ratios proportionate to embodied labour ratios. I do not feel personally that the quotations adduced by these commentators can legitimately be interpreted in this way.

3. However, there is very slightly more in Marx on 'scarcity' as such, abstracting from its connexion with the labour theory of value, than I implied, and I recognize that Mr. Meek has made a good point here with his four longer and rather more rational quotations on pp. 287–8. Nevertheless, they do not amount to very much. Only three of them can be found in the whole vast corpus of Marx's writings (the fourth is from Engels); they

[1] *Proceedings of the Aristotelian Society*, new series, vol. 17, p. 72.

come from widely separated places and are in no way developed or worked into the framework of his doctrine. Whitehead's aphorism still applies, only this time a hundredfold instead of a thousandfold. A long-lived, prolific, contentious, and well-read author is bound to touch most issues connected with his subject. But he is not bound to understand them.

4. Turning to the Soviet Union (p. 291), Mr. Meek bowls us a rather fast ball, indeed a no-ball:

> The very high rate of investment which was decided upon, and the great emphasis which was laid on the expansion of the capacity of heavy industry, meant that the rate of expansion of the consumers' goods industries was relatively slow. Under such conditions, the problem with which we are now concerned was evidently a comparatively unimportant one—and also, of course, a comparatively easy one to deal with. 'The alternatives that can appear on the economic agenda at any one time', as Mr. Dobb has said, 'will themselves be conditioned by the means available. . . . When a country is still very poor, it will be a matter of producing one type (or at most very few types) of a narrow range of articles of prime necessity. . . . The smaller the variety in production, the more obvious and the less controversial is likely to be the decision about what are the essential priorities.

My article[1] was concerned with the scarcity problem quite generally, but by some sleight of hand Mr. Meek has achieved total unconcern with investment criteria, and confines himself to the choice between alternative current outputs for consumption. Why? Why is the choice between canals and railways (so manifestly irrational, by the way, in U.S.S.R.) less interesting or relevant than that between bicycles and saucepans? Can it be that Mr. Meek thinks he may neglect the question of micro-economic investment choices because on the previous page he has dismissed as political the macro-economic choice between investment and consumption as wholes? It would appear that this is indeed what he thinks, for on p. 295 (point 5) he says the 'investment controversy' is continuing. But it is a totally different investment controversy to which he refers: the question whether, *as a matter of input-output relations*, Malenkov is right in believing that light industry can grow more quickly than heavy, or Khruschchov is right in believing that heavy industry must grow more quickly than light. The investment controversy discussed in my own article was a purely micro-economic one about the choice between capital-intensive and labour-intensive variants in carrying out a predetermined investment project. Surely only a Marxist, unappreciative of scarcity economics by the whole set of his mind, could confuse these two questions.

So consumption is certainly not the only 'problem with which we are now concerned'. Nor is it acceptable that poverty reduces the importance of choice questions. On the contrary, it increases it. It is much more urgent to allocate food rightly in a famine than in a glut. *Pace* Mr. Dobb, the choice between growing wheat or potatoes is present both in U.S.S.R.

[1] Scarcity, Marxism, and Gosplan, *Oxford Economic Papers*, Oct. 1953.

and U.S.A.: in neither the scarcity of the one nor the plenty of the other is the correct choice obvious, and the matter is clearly more, not less, controversial in U.S.S.R., where small differences in food output matter more. There is never such poverty that there is only one consumption good, and therefore there is always choice, but correct choice matters most where marginal utilities are highest, and this is where there is most poverty. Scarcity economics is most important where there is most scarcity of goods. It is the advanced capitalist economies that can best afford the irrationalities so gaily accepted in the poverty of the Soviet Union.[1] My own doubts as to the importance of rationality have quite other grounds: first that growth matters more, second that strict attention to rationality is psychologically, perhaps even economically, bad for growth.[2]

5. On pp. 292–3 it is suggested that I have missed out something relevant to scarcity economics by neglecting Stalin's piece on the law of value in agriculture.[3] To this I can best reply in Mr. Meek's own words: 'Stalin lays down no specific rules for the solution of the "scarcity problem" under communism: in fact he does little more than echo the traditional Marxist idea of the necessity for a "balancing of useful effects and expenditure of labour".'

6. Suslov *did* attack Voznesensky for overrating the price mechanism.[4] I am completely at a loss to understand how this could be denied. Here, to repeat, are his words: 'But actually Voznesensky's work only brought confusion into the theory of the political economy of socialism, since it contained a hodge-podge of arbitrary opinions about the role of the plan and the State in Soviet society and fetishised the law of value as the regulator of the distribution of labour between individual branches of the Soviet economy'.[5] It does therefore appear that in micro-economic matters Voznesensky favoured the price mechanism more than Stalin. Indeed, the long quotations from the two authors on pp. 310 and 311 of my article show Stalin directly attacking Voznesensky on this precise point. If Mr. Meek is, Marxism permitting, in favour of the price mechanism he must have the courage of his deviations, and support Voznesensky against his (presumably) murderers, be they never so highly placed. He is right, however, to stress Voznesensky's macro-economic futurism, his exaggeration of Soviet economic power (which brought him, *inter alia*, to support Zhdanov's forward foreign policy), his general feeling that things were easy enough now for economic administration to supplant political force, i.e. for the State and the managers to oust the Party. Now a general feeling

[1] Compare ch. 8, 'The Unseemly Economics of Opulence', in J. K. Galbraith's *American Capitalism*.
[2] Cf. Wiles, *Economic Journal*, June 1956.
[3] In his *Economic Problems of Socialism in U.S.S.R.*
[4] Meek, op. cit., footnote 3 on p. 293.
[5] *Pravda*, 24 Dec. 1952.

that 'things are easier now, we are over the hump and can relax' will *arise* in the mind of a Communist because he overrates the past successes of central planning, forced industrialization, &c., but will *issue in* a desire to abolish these things and substitute increased consumption, consumer's sovereignty, the price mechanism, and the independence of the manager—which is now happening. There is therefore no contradiction between a feeling that 'the Soviets can do anything' or 'economic laws do not apply' (i.e. long-term physical bottlenecks don't exist), and a positive attitude towards the price mechanism. Both spring from a sanguine temperament and a desire to humanize Communism.[1]

7. I wholly agree with the suggestion that nowadays more practical, though possibly not more theoretical, attention is paid to questions of choice, scarcity, and consumer's sovereignty in U.S.S.R.

[1] On the liquidation of Voznesensky compare N. Jasny, *The Soviet Price System*, pp. 15–16; M. Ebon, *Malenkov*, pp. 63–65; Research Program on the U.S.S.R. (N.Y., 1953), *Soviet Economic Policy in Post-war Germany*, pp. 41–42.

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ECONOMICA

Published Quarterly

ECONOMICA is published quarterly by the London School of Economics and Political Science, in February, May, August, and November, and is devoted to research in the fields of Economics, Economic History, and Statistics. The Journal is under the direction of an editorial board composed of Professor R. G. D. Allen, Professor T. S. Ashton (Acting Editor), Professor W. T. Baxter, Professor E. H. Phelps Brown, Sir A. M. Carr-Saunders, Professor R. S. Edwards, Professor J. E. Meade, Professor F. W. Paish, Professor Sir Arnold Plant, Professor Lionel Robbins, Professor R. S. Sayers (Acting Editor), with Mr. A. T. Peacock as Assistant Editor.

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INDIAN JOURNAL OF ECONOMICS

Volume XXXV April 1955 No. 139

Editor: DR. OM PRAKASH

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PRINTED IN GREAT BRITAIN, AT THE UNIVERSITY PRESS, OXFORD
BY CHARLES BATEY, PRINTER TO THE UNIVERSITY

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